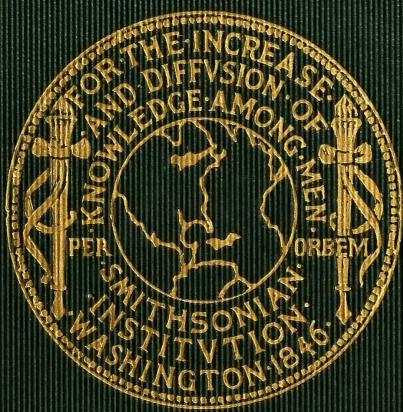
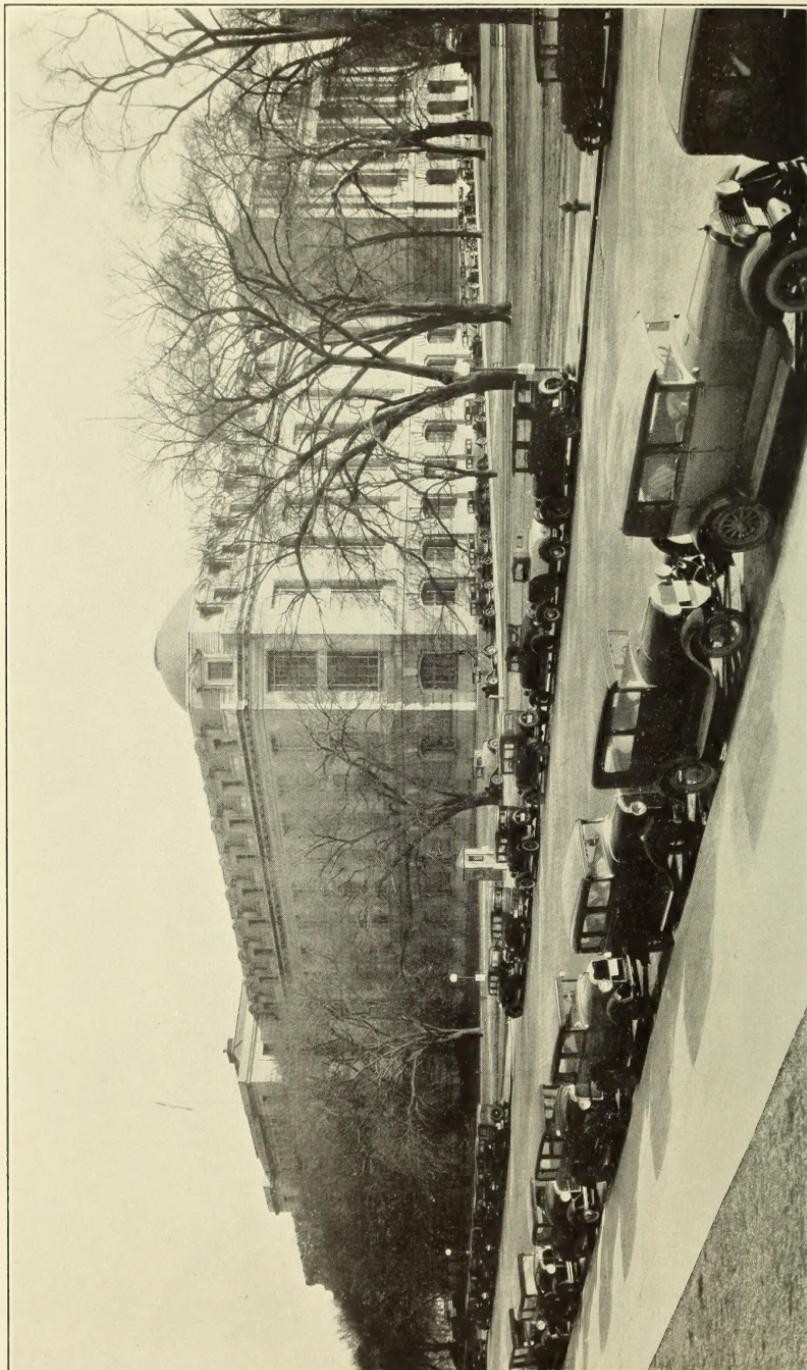


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THE NATURAL HISTORY BUILDING, UNITED STATES NATIONAL MUSEUM, FROM THE NORTHWEST

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM

REPORT ON THE PROGRESS
AND CONDITION OF THE UNITED STATES
NATIONAL MUSEUM FOR THE YEAR
ENDED JUNE 30, 1932



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1932

UNITED STATES NATIONAL MUSEUM,
UNDER DIRECTION OF THE SMITHSONIAN INSTITUTION,
Washington, D. C., October 7, 1932.

SIR: I have the honor to submit herewith a report upon the present condition of the United States National Museum and upon the work accomplished in its various departments during the fiscal year ended June 30, 1932.

Very respectfully,

ALEXANDER WETMORE,
Assistant Secretary.

Dr. CHARLES G. ABBOT,
Secretary, Smithsonian Institution.

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STAFF OF UNITED STATES NATIONAL MUSEUM

[June 30, 1932]

CHARLES G. ABBOT, Secretary of the Smithsonian Institution, keeper *ex officio*.
ALEXANDER WETMORE, Assistant Secretary, Smithsonian Institution, in charge
United States National Museum.

JOHN E. GRAF, Associate Director, United States National Museum.

WILLIAM DE C. RAVENEL, Administrative Assistant to the Secretary.

SCIENTIFIC STAFF

DEPARTMENT OF ANTHROPOLOGY:

Walter Hough, head curator; W. H. Egberts, chief preparator.

Division of Ethnology: Walter Hough, curator; H. W. Krieger, curator;
H. B. Collins, jr., assistant curator; Arthur P. Rice, collaborator.

Section of Musical Instruments: Hugo Worch, custodian.

Section of Ceramics: Samuel W. Woodhouse, collaborator.

Division of Archeology: Neil M. Judd, curator; F. M. Setzler, assistant
curator; R. G. Paine, aid.

Division of Physical Anthropology: Aleš Hrdlička, curator; Thomas D.
Stewart, assistant curator.

Collaborator in anthropology: George Grant MacCurdy.

Collaborator in Old World archeology: J. Townsend Russell.

Associate in historic archeology: Cyrus Adler.

DEPARTMENT OF BIOLOGY:

Leonhard Stejneger, head curator; W. L. Brown, chief taxidermist.

Division of Mammals: Gerrit S. Miller, jr., curator; Remington Kellogg,
assistant curator; A. J. Poole, scientific aid; A. Brazier Howell, collaborator.

Division of Birds: Herbert Friedmann, curator; J. H. Riley, associate
curator; Alexander Wetmore, custodian of alcoholic and skeleton collec-
tions; Edward J. Brown, collaborator; Casey A. Wood, collaborator;
Arthur C. Bent, collaborator.

Division of Reptiles and Batrachians: Leonhard Stejneger, curator; Doris
M. Cochran, assistant curator.

Division of Fishes: Barton A. Bean, assistant curator; E. D. Reid, aid.

Division of Insects: L. O. Howard, honorary curator; J. M. Aldrich, asso-
ciate curator; William Schaus, honorary assistant curator; B. Preston
Clark, collaborator.

Section of Hymenoptera: S. A. Rohwer, custodian; W. M. Mann,
assistant custodian; Robert A. Cushman, assistant custodian.

Section of Myriapoda: O. F. Cook, custodian.

Section of Diptera: J. M. Aldrich, in charge; Charles T. Greene,
assistant custodian.

Section of Coleoptera: L. L. Buchanan, specialist for Casey collection.

Section of Lepidoptera: J. T. Barnes, collaborator.

Section of Orthoptera: A. N. Caudell, custodian.

Section of Hemiptera: W. L. McAtee, acting custodian.

Section of Forest Tree Beetles: A. D. Hopkins, custodian.

DEPARTMENT OF BIOLOGY—Continued.

Division of Marine Invertebrates: Waldo L. Schmitt, curator; C. R. Shoemaker, assistant curator; James O. Maloney, aid; Mrs. Harriet Richardson Searle, collaborator; Max M. Ellis, collaborator; William H. Longley, collaborator; Maynard M. Metcalf, collaborator; Joseph A. Cushman, collaborator in foraminifera.

Division of Mollusks: Paul Bartsch, curator; William B. Marshall, assistant curator; Horace G. Richards, assistant curator; Mary Breen, collaborator.

Section of Helminthological Collections: Maurice C. Hall, custodian.

Division of Echinoderms: Austin H. Clark, curator.

Division of Plants (National Herbarium): Frederick V. Coville, honorary curator; W. R. Maxon, associate curator; Ellsworth P. Killip, associate curator; Emery C. Leonard, assistant curator; Conrad V. Morton, aid; Egbert H. Walker, aid; John A. Stevenson, custodian of C. G. Lloyd mycological collection.

Section of Grasses: Albert S. Hitchcock, custodian.

Section of Cryptogamic Collections: O. F. Cook, assistant curator.

Section of Higher Algae: W. T. Swingle, custodian.

Section of Lower Fungi: D. G. Fairchild, custodian.

Section of Diatoms: Albert Mann, custodian.

Associates in Zoology: C. Hart Merriam, W. L. Abbott, Mary J. Rathbun, C. W. Stiles.

Associate Curator in Zoology: Hugh M. Smith.

Associate in Marine Sediments: T. Wayland Vaughan.

Collaborator in Zoology: Robert Sterling Clark.

Collaborators in Biology: A. K. Fisher, David C. Graham.

DEPARTMENT OF GEOLOGY:

R. S. Bassler, head curator; Margaret W. Moodey, aid.

Division of Physical and Chemical Geology (systematic and applied): W. F. Foshag, curator; Edward P. Henderson, assistant curator.

Division of Mineralogy and Petrology: W. F. Foshag, curator; Frank L. Hess, custodian of rare metals and rare earths.

Division of Stratigraphic Paleontology: Charles E. Resser, curator; Gustav A. Cooper, assistant curator; Jessie G. Beach, aid.

Section of Invertebrate Paleontology: T. W. Stanton, custodian of Mesozoic collection; Paul Bartsch, curator of Cenozoic collection.

Section of Paleobotany: David White, associate curator.

Division of Vertebrate Paleontology: Charles W. Gilmore, curator; Charles L. Gazin, assistant curator; Norman H. Boss, chief preparator.

Associate in Mineralogy: W. T. Schaller.

Associate in Paleontology: E. O. Ulrich.

Associate in Petrology: Whitman Cross.

DEPARTMENT OF ARTS AND INDUSTRIES, AND DIVISION OF HISTORY:

William deC. Ravenel, director of arts and industries.

Division of Engineering: Carl W. Mitman, curator.

Section of Mechanical Technology: Frank A. Taylor, assistant curator; Fred C. Reed, scientific aid.

Section of Aeronautics: Paul E. Garber, assistant curator.

Section of Mineral Technology: Carl W. Mitman, in charge; Chester G. Gilbert, honorary curator.

DEPARTMENT OF ARTS AND INDUSTRIES, AND DIVISION OF HISTORY—Continued.

Division of Textiles: Frederick L. Lewton, curator; Mrs. E. W. Rosson, aid.

Section of Wood Technology: William N. Watkins, assistant curator.

Section of Organic Chemistry: Aida M. Doyle, aid.

Division of Medicine: Charles Whitebread, assistant curator.

Division of Graphic Arts: R. P. Tolman, curator.

Section of Photography: A. J. Olmsted, assistant curator.

Division of History: T. T. Belote, curator; Charles Carey, assistant curator;

Mrs. C. L. Manning, philatelist.

ADMINISTRATIVE STAFF

Chief of correspondence and documents, H. S. Bryant.

Assistant chief of correspondence and documents, L. E. Commerford.

Superintendent of buildings and labor, J. S. Goldsmith.

Assistant superintendent of buildings and labor, R. H. Trembly.

Editor, Paul H. Oehser.

Engineer, C. R. Denmark.

Disbursing agent, N. W. Dorsey.

Photographer, A. J. Olmsted.

Property clerk, W. A. Knowles.

Assistant librarian, Leila G. Forbes.

REPORT ON THE PROGRESS AND CONDITION OF THE UNITED STATES NATIONAL MUSEUM FOR THE YEAR ENDED JUNE 30, 1932

By ALEXANDER WETMORE
Assistant Secretary, Smithsonian Institution

FOREWORD

The Congress of the United States in the act of August 10, 1846, founding the Smithsonian Institution, recognized that an opportunity was afforded, in carrying out the design of Smithson for the increase and diffusion of knowledge, to provide for the custody of the Museum of the Nation. To this new establishment was, therefore, intrusted the care and development of the national collections. At first the cost of maintaining this activity was paid from the Smithsonian income; then for a time the Government bore a share; but since 1877 Congress has provided for the expenses of the Museum.

The museum idea was fundamental in the organic act establishing the Smithsonian Institution, which was based upon a 12-year discussion in Congress and the advice of the most distinguished scientific men, educators, and intellectual leaders of the Nation during the years 1834 to 1846. It is interesting to note how broad and comprehensive were the views which actuated the Congress in determining the scope of the Museum, a fact especially remarkable when it is recalled that at that date no museum of considerable size existed in the United States, and the museums of England and of the Continent of Europe, although containing many rich collections, were still to a large extent without a developed plan.

The Congress which passed the act of foundation enumerated as within the scope of the Museum "all objects of art and of foreign and curious research and all objects of natural history, plants, and geological and mineralogical specimens belonging to the United States," thus indicating the Museum at the very outset as the Museum of the United States and as one of the widest range in its activities. It was appreciated that additions would be necessary to the collection then in existence, and provision was made for their increase by the exchange of duplicate specimens, by donations, and by other means.

The maintenance of the Museum was long ago assumed by Congress, the Smithsonian Institution taking upon itself only so much of the necessary responsibility for its administration as is required

to coordinate it with its other activities. The Museum as a part of the Smithsonian Institution is an integral part of a broad organization for increase and diffusion of knowledge, for scientific research, for cooperation with departments of the Government, with universities and scientific societies in America, and with all scientific institutions and men abroad who seek interchange of views with men of science in the United States.

Since 1846 the only material changes in the scope of the National Museum have been (1) the addition of a division of American history, intended to illustrate, by an appropriate assemblage of objects, important events, the domestic life of the country from the colonial period to the present time, and the lives of distinguished personages, and (2) provision, in 1920, for the separate administration of the National Gallery of Art as a coordinate unit under the Smithsonian Institution. From 1906 to 1920 the gallery was administered as the department of fine arts of the Museum.

The development of the Museum has been greatest in those subjects that the conditions of the past three-quarters of a century have made most fruitful—the natural history, geology, ethnology, and archeology of the United States, which have been supplemented extensively by collections from other countries of the world. Opportunities for acquisition in these various directions in the first years of the institution were mainly brought about through the activities of the scientific and economic surveys of the Government, many of which have been the direct outgrowths of earlier explorations stimulated or directed by the Smithsonian Institution. Additions from these sources still continue in large volume. As supplemental to them an increasing number of persons interested in science make annual additions to our collections either directly or through financial support of expeditions by members of the staff. The increment of material from these contributions increases annually and is greatly appreciated. Such outside aid brings material that is of great importance and that often can be obtained in no other way.

The Centennial Exhibition of 1876 afforded opportunity for establishing a department of industrial arts, which has received great impetus recently through the cooperation of industrial firms and associations, particularly in the assembling of material illustrative of historical development in various lines. The historical series has been greatly augmented since 1918 by large collections illustrative of the World War, and also by extensive additions to exhibits in aircraft and kindred subjects that have been received during this period.

Public interest in the growth and development of the National Museum is reflected by the steady increase in recorded attendance, in correspondents, and in requests for information.

OPERATIONS FOR THE YEAR

APPROPRIATIONS

Provision for the maintenance of the United States National Museum for the fiscal year ended June 30, 1932, was made by appropriations carried in the Executive and independent offices act approved February 23, 1931, and the second deficiency act, fiscal year 1931, approved March 4, 1931, as follows:

Preservation of collections	\$618,890
Deficiency act, fiscal year 1932	1,620
	<hr/>
	620,510
Maintenance and operation	154,580
Plans for additions to Natural History Building	10,000
Printing and binding	50,000
	<hr/>
	835,090

The statement of the regular appropriations is different in regard to name from that in previous years. At the direction of the Bureau of the Budget, in preparing estimates for the fiscal year 1932, attention was given to the consolidation of the different appropriations for the National Museum, with the result that the six separate items formerly used were combined under two main headings. The appropriation preservation of collections includes the former appropriation of that name, together with those items previously designated separately for books and for postage. The appropriation maintenance and operation has combined under one heading the three items formerly entitled heating and lighting, furniture and fixtures, and building repairs. The authority under these combinations is identical with that under the former appropriations. The change has simplified various administrative problems.

The appropriations for 1932 exceeded those for 1931 by \$4,696, but there are included various readjustments that require explanation. The amount available under preservation of collections was increased by \$20,416, of which \$18,600 was applied to personnel and \$1,816 to supplies of various kinds and to freight. Additions to personnel included an assistant clerk-stenographer each for the division of birds, the division of insects, and the office of the superintendent of buildings and labor, eight additional guards required in the various Museum buildings, and two junior laborers. These new positions mark a valuable and much-needed increase in our staff, which even with these additions still remains badly undermanned.

The sum of \$2,160 was added to the rolls through reallocations made by the Personnel Classification Board. Other increases include \$500 for supplies and materials, \$500 for freight, and \$816 for equipment.

The appropriations for building repairs for 1931 included the following four items that were for noncontinuing operations: Electric pump, \$2,000; aircraft-shed repairs and fire safeguards, \$7,000; overhead galleries for the mammal collections, \$25,000; and comfort-room repairs, \$3,500—a total of \$37,500. These items were therefore omitted in the appropriation for 1932. Additions under maintenance and operations for 1932 included a painter and a carpenter at \$1,860 each, to supplement the cabinet-shop force, and an undermechanic at \$1,320, in the mechanical shops. There was also an addition of \$1,800 for the purchase of paints, lumber, and metals, and \$1,440 for glass jars, vials, boxes, and other containers for specimens. As these increases total \$8,280, while the omitted items amounted to \$37,500, there is a decrease under this heading of \$29,220.

The sum available for printing and binding was increased by \$3,500 to care for arrears in the printing of manuscripts, an item for which further additional funds are much needed.

Requirements for additional funds for the maintenance of the National Museum follow lines indicated in previous annual reports. One of the principal needs is for personnel. Clerical help is at a minimum, and in several divisions no help at all of this character is available. Additional scientific workers are needed to care for collections, further help is imperative in our shops, and our guard and labor forces are inadequate in numbers. Additional money is needed also for supplies, travel, and similar items.

In last year's report mention was made of the Smoot-Elliott bill, approved by the President on June 19, 1930, authorizing the extension of the Natural History Building through wings at the east and west ends, at a cost of \$6,500,000. The second deficiency bill for 1931 carried \$10,000 for the preparation of preliminary plans for these additions. The executive committee of the Board of Regents of the Smithsonian Institution selected the Allied Architects (Inc.), of Washington, D. C., to make the necessary preliminary plans. Work has progressed rapidly and these plans are now in hand.

Estimate of \$1,200,000 for a first appropriation to begin construction was included in the items submitted to the Bureau of the Budget for the fiscal year 1933, this amount being considered sufficient for excavations, foundations, and similar items. Owing to the financial situation that arose and the necessary restrictions that this imposed in the National Budget, it was not practicable to include this item

in the estimates finally submitted to Congress, nor was there later opportunity to consider it favorably. The matter has rested at this point pending favorable opportunity for reconsideration.

The increase in space that these new wings will bring is seriously needed, since the entire area available for the Museum in its various buildings is so badly crowded as to interfere with logical arrangement of exhibits and storage collections, and there can be no expansion. The matter is particularly important in view of the many excellent specimens that are constantly offered that form highly desirable additions to our collections. Many expedients are adopted to provide additional storage for our steadily growing collections, but we are about at the end of our resources. Since more than two years will be required before the new area is ready for occupancy after construction is begun, work on the wings should commence as soon as practicable.

Completion of plans for the Natural History Building will provide properly for our needs in one direction, but other collections require more adequate housing than we are able to give them with our existing structures. The great collections in engineering, aviation, textiles, history, and associated fields are found at present in the Old Museum Building, constructed in 1881 at a cost of \$225,000, and in a temporary building that houses most of the aircraft. The Old Museum Building, while excellent in its day, is not modern, and through its design it does not lend itself to many types of exhibition nor is it convenient in arrangement for the visiting public. According to present plans it must be removed eventually to permit the passage of Ninth Street through the Mall. The long, unsightly, shed-like structure housing most of the aircraft collection is entirely temporary. Both buildings are so crowded that many desirable objects offered for the collections can not be accepted because we have no place to put them. In fact, the addition of objects of any size in these collections can not now be considered. Plans should be drawn as soon as possible for a structure large enough to house adequately the collections concerned with arts and industries, including aircraft. There should be, further, a separate building for our great historical collections, including relics of Washington, Lincoln, and many other illustrious Americans; the original Star Spangled Banner; our great series of costumes, particularly those of the wives of the Presidents; and many other objects of pride to our Nation that should be displayed in proper form for the thousands of visitors to Washington.

Additional personnel for the National Museum is of paramount importance. The present staff is fully occupied, and constant need arises for additional assistance, as many important tasks have to be

postponed, sometimes for years. Though a small part of this need for help may be met through temporary employees, this method is not satisfactory, since there are only certain tasks that can be so handled. Furthermore, since temporary employees are available only for limited periods, a good part of which may be occupied in training, proper efficiency is attained in some instances only toward the close of the period of employment. There are positions that should be established permanently in all the departments to enable the organization to function efficiently.

COLLECTIONS

Growth of the collections of the National Museum during the year was normal. Many valuable specimens were received but no such large collections as have swelled the additions of the past few years. The increments were covered in 1,675 separate accessions, with a total of 157,870 specimens.

The specimens indicated were divided among the various departments as follows: Anthropology, 5,413; biology, 121,701; geology, 21,395; arts and industries, 3,305; history, 6,056. The total increase for the previous year was 1,022,850 specimens, including large gatherings of mollusks from explorations in the field and the Barnes collection of Lepidoptera of several hundred thousand specimens.

Through the income of the Roebling fund of the Smithsonian Institution a number of valuable accessions were obtained, outstanding examples being an 81-ounce nugget of gold from Plumas County, Calif., an example of leaf gold, specimens of rare uranium minerals, and two flawless crystals of aquamarine. The fourth lot of invertebrate fossils presented by Dr. A. F. Foerste from his private collection numbered about 10,000 specimens. Valuable sets of fossil plants were received by transfer from the United States Geological Survey.

Through field investigations financed by the Smithsonian Institution, important collections of fossils, particularly of mammals, were secured. C. W. Gilmore obtained a considerable part of a large creodont, three partial skeletons of *Coryphodon*, fossil turtles, several skulls of a primitive alligator (*Allognathosuchus*), and some remains of the giant flightless bird *Diatryma*. N. H. Boss collected a series of fossil horse bones from the quarry near Hagerman, Idaho, that included 32 skulls and 4 partly articulated skeletons, adding measurably to our series of the Pliocene horse *Plesippus shoshonensis*.

In the department of anthropology, through Mrs. Charles D. Walcott, several ancient wooden poi bowls from the Hawaiian Islands were obtained, which are highly valuable and are new to our collections. C. C. Roberts gave additional ethnological material from

Nigeria and the Gold Coast, including pottery, textiles, brass castings, and other specimens that supplement his earlier gifts.

Through arrangements made by J. Townsend Russell, a plaster cast of the famous bison carved in clay by men of the Upper Paleolithic period in the cave of Tuc d'Audoubert, Ariège, France, was obtained for exhibition by purchase through the Old World Archeology fund of the Smithsonian Institution. There came also a series of stone artifacts of Aurignacian age from the French Pyrenees collected by Mr. Russell as director of the Franco-American Union for Prehistoric Research in France.

One of the most interesting general collections of biological materials was obtained by Mrs. L. O. Sordahl while at the solar observatory of the Smithsonian Institution on Mount Brukkaros in Southwest Africa. This includes birds, mammals, reptiles, and plants, some of which were new to science, and many of which had not been represented previously in the National Museum, as the region is one from which we have had little or no material.

A complete skeleton of the Pacific pike whale was one of the important accessions in the division of mammals. The division of birds obtained 23 genera and 340 forms that were new to its collections, a considerable number coming from Africa through funds supplied by the late Marcus Daly.

An ocean sunfish (*Mola mola*), weighing about 1,200 pounds, captured in nets of the Bayhead Fisheries (Inc.), was presented through Edward C. Worden, of Millburn, N. J., and will be mounted for exhibition.

Dr. Hugh M. Smith forwarded further collections from Siam, including birds, mammals, reptiles, fishes, and mollusks, adding appreciably to his previous collections from that area. Mammals presented by W. G. Sheldon and Richard Borden from collections made in British Columbia have been highly important.

In the division of engineering a full-size model of a soft-coal mine was under construction, for which several companies contributed materials in the form of safety lamps, miners' belts, mine cars, mine timbers, and various other devices that will make a most attractive exhibit when assembled.

The section of aeronautics received from the Autogiro Co. of America the first autogiro to fly in this country, an invention of Juan de la Cierva. This interesting machine was flown to Washington by James Ray, vice president of the Autogiro Co., and was landed in a narrow space on the lawn in front of the Arts and Industries Building, where it was formally presented to the Museum. The Packard Motor Car Co. presented the original Packard-Diesel aircraft engine to the national aircraft collection, the company having received the Collier trophy for the year 1931 for its achievement in the produc-

tion of this motor. This trophy is awarded annually for outstanding accomplishment in American aeronautics.

For the collection illustrating the development of land transportation, an electric brougham of about 1900 was received as a gift from Mrs. Herbert Wadsworth. The vehicle dates from the days when electrically driven cars were winning automobile races and were more advanced than vehicles equipped with gasoline engines.

For the collection showing the development of timekeeping the city of Frederick, Md., presented a tower-clock movement made about 1791 that was continuously in use as the town clock until a few years ago. The pendulum, which is approximately 14 feet long, made a complete cycle once every 2 seconds.

From Mrs. Daniel Gardner the division of textiles received a notable series of specimens illustrating the textile art and related subjects of the early nineteenth century. These included hand-woven blankets, bed linens made from hand-spun yarns, Paisley and India shawls, coverlets, and baskets.

Through exchange with the Yale University School of Forestry the wood collections received a set of 116 Liberian woods obtained where extensive forests were being cleared for rubber planting.

The division of history obtained as its outstanding addition a series of 71 paintings by the late J. L. Gérôme Ferris, presented by Mrs. Ferris, the set representing the life work of this well-known American artist. The pictures illustrate notable events in American history from the time of the discovery to the World War. A number deal with the career of George Washington. The personnel of the Eighty-first Division, A. E. F., presented a portrait of Maj. Gen. Charles J. Bailey, painted by Joseph Cummings Chase. The Chase collection of A. E. F. portraits in the National Museum now includes 48 paintings.

For the antiquarian collections Mrs. Eleanore Daughaday Hertle, through her husband, Louis Hertle, gave a topaz necklace that was presented to Mrs. James Monroe by her husband, James Monroe, when he was United States minister to France. This necklace is installed in the costumes collection on the figure representing Mrs. Monroe in the series of White House dresses.

During the year there were received 1,260 lots of material for examination and report, the larger part being geological and botanical and including a large number of individual specimens. Part of this material was returned by request to the senders and a part was retained for our collections.

Gifts of specimens to schools and other educational organizations numbered 6,299 specimens, including 4 sets of mollusks, of 149 specimens each; 5 sets to illustrate rock weathering and soils, of 12 speci-

mens each; 26 sets of rocks, ores, and minerals, of 83 specimens each; and 5 sets of fishes. Exchanges of duplicate materials with other institutions and individuals totaled 11,621 specimens. Loans to workers outside of Washington numbered 36,639 specimens, involving much labor in handling and packing.

Following is a summary of specimens now covered in the Museum catalogues:

Anthropology	667, 812
Biology	10, 450, 778
Geology	2, 092, 768
Arts and industries	112, 541
History	404, 898
 Total	 13, 728, 797

CHANGES IN EXHIBITIONS

Following renovation of the Aircraft Building for safeguards against fire, the collections in aeronautics were rearranged and the building was opened once more to the public.

In the Arts and Industries Building a new case, one of the largest in the Museum, was constructed for the Star Spangled Banner, displaying the entire design of this important flag. The new installation has proved most attractive, making this historic emblem one of the dominating features of the north hall, where it shows to great advantage.

The naval collection shown formerly in the rotunda of the Natural History Building was transferred in the late winter and early spring to the northwest court of the Arts and Industries Building, this move bringing all the historical collections together into contiguous space, greatly to the advantage of visitors and to the arrangement of the exhibits. The Belleau Wood model was the most difficult item in this shift, requiring special handling because of the type of construction of the case and its large size. Many of the other specimens involved were of great size and weight. Another entrance was made into the court from the north hall, and the naval exhibits are now shown attractively and prominently adjacent to the other historical materials.

The shift in the naval collections involved the removal of the collection of musical instruments to the second-floor gallery of the southeast range.

As another major feature in connection with the historical series the Ferris collection of paintings was installed in specially built alcoves along the south side of the costumes hall. Here, with the aid of specially arranged lighting, they make a most attractive dis-

play. The paintings have all been protected against the accumulation of dust and danger of injury by being placed behind glass.

The historical relics concerning George Washington were all assembled in the north hall, where they are shown more conveniently and attractively for visitors during the George Washington Bicentennial celebration.

For the period of the Bicentennial a special exhibition, principally of statuary, under the auspices of the National Sculpture Society, was installed in the National Gallery of Art with extension into the rotunda of the Natural History Building. The rotunda will now be kept free of ordinary exhibits that it may serve its proper purpose as an impressive entrance into the building. The greater part of the foyer was allotted for a temporary exhibit of the National Capital Park and Planning Commission dealing with the development of and future plans for the city of Washington. These will be removed at the close of the Bicentennial celebration.

EXPLORATIONS AND FIELD WORK

Investigations in the field have as usual covered a wide variety of interests, including researches concerned with man, with fossil creatures of many kinds, and with various phases of living animal and plant life. The work has been carried on mainly through grants from the general income of the Smithsonian Institution, assisted by contributions from individuals, while certain projects were financed through the income of special funds under jurisdiction of the Smithsonian. Assistance in this work from the annual governmental appropriations for the National Museum has been small and has concerned only part of the various projects. Further financial assistance in these matters, especially from private sources, is one of the definite needs of our organization.

Through the financial assistance of Dr. W. L. Abbott, long a friend of the Smithsonian Institution, Herbert W. Krieger, curator of ethnology, carried on archeological investigations in Cuba in continuation of similar work that he has pursued for several years in Haiti and the Dominican Republic. His investigations extended from the end of January to the middle of April and included work at a variety of sites between Camaguey and the extreme western end of the island, with additional studies on the Isle of Pines. The resulting collections have been considerable, and preliminary study of them indicates important evidence in the correlation and distribution of the prehistoric human cultures of the West Indian area. Considerable biological material, of value in indicating the presence of animals both living and extinct, is included.

Doctor Krieger was also occupied at various times in exploring Indian village sites in the lower Potomac River area not far from Washington. He has prepared a map showing the location of known sites and has attempted to correlate data recovered with descriptions of such sites in the works of Capt. John Smith and others. The work when completed will result in important information, as aside from the writings of Smith and Raleigh we have practically nothing of a historical description of the Indians of tidewater Virginia and of the Carolinas.

Archeological work in northern Alaska was carried on during the summer by James A. Ford and Moreau B. Chambers under the general direction of H. B. Collins, jr., who has been working in this area for several years. Mr. Chambers excavated for three months at Gambell, St. Lawrence Island, where during the summer of 1930 Mr. Collins had found an unbroken sequence of Eskimo occupation, extending from an early phase of the Old Bering Sea culture to the present time. Mr. Chambers's work added to the completeness of this chronological record, bringing especially further evidence of the transitional phase between the Old Bering Sea and the Punuk periods. Mr. Ford proceeded to Point Barrow, but as ice conditions in the Arctic were the worst in many years he did not arrive until late in August, when the ground was beginning to freeze. Arrangements were made, therefore, for him to stay at Barrow over the winter so as to get in a full season of excavation in 1932. During the winter he was occupied in various studies pertaining to the modern Eskimo. His archeological work began again in June.

During September and part of October, Neil M. Judd, curator of archeology, was engaged in an archeological reconnaissance on the San Carlos Indian Reservation, Ariz., on behalf of the Bureau of American Ethnology. The investigation was prompted by reports of old baskets in a cave, but instead of the ancient Basket Maker material anticipated the baskets proved to be of Apache origin, perhaps dating no earlier than the last major uprising of the Apache Indians, 1871 to 1886. Several caves near Arsenic Spring, on the southwest slopes of the Natares Plateau, sheltered small Pueblo ruins whose associated pottery fragments suggest occupancy in the thirteenth century or later.

From February 21 to June 11, 1932, F. M. Setzler, assistant curator of archeology, continued his archeological work in the Big Bend region of southern Texas, an area heretofore unknown archeologically, which is thought to conceal important information relative to prehistoric contacts between the tribes of northeastern Mexico and those of the lower Mississippi Valley. Materially aided by the

staff of the Plant Quarantine and Control Administration of the United States Department of Agriculture at Alpine, Mr. Setzler centered his recent explorations in the Chisos Mountains district, overlooking the Rio Grande. A number of important caves in this region were investigated, and various other examinations were made that correlate with results obtained last year in Presidio County, to the west. From the past two seasons' field work Mr. Setzler concludes that the nonpottery-making culture he has noted in various places is uniformly distributed throughout the lower part of the Big Bend region.

During the present year the cooperative agreement between the Smithsonian Institution and the University of Toulouse for the excavation of prehistoric sites in France, arranged by J. Townsend Russell, collaborator in Old World archeology, as representative of the Smithsonian Institution, became formally effective. In July, 1931, as field director of the Smithsonian Institution-University of Toulouse researches in prehistory, financed by the Institution from the Old World Archeology fund, Mr. Russell initiated excavations in the cave of Marsoulas, in the commune of the same name, Department of Haute-Garonne, southern France. Count Henri Begouen, professor of prehistory at the University of Toulouse, participated in the investigations as representative of the university. Exploratory soundings were also made in the near-by cave of Tarte, in the cave of Roquecourbere, one of the two sites of Solutrean age in the Pyrenees, and in the workshop of Roquecourbere. In consequence of this preliminary work a formal agreement was signed on November 27 for cooperative work between the University of Toulouse and the Smithsonian Institution in the same general region during a period of 10 years.

It is a privilege to be able thus to join with the University of Toulouse in researches which should contribute new information to present knowledge of paleolithic man. While the cooperative agreement provides that the rarest objects remain in France, the generosity of the University of Toulouse is apparent from the fact that it retained only two of the specimens found during the preliminary work of the season of 1931. Thus it is to be expected that representative series of artifacts will come to help fill the gaps in our limited exhibits of European prehistory.

At the opening of the fiscal year Dr. Aleš Hrdlička, curator of physical anthropology, was engaged in anthropological and archeological investigations in Alaska that included studies in the lower Nushagak River, Bristol Bay, and Iliamna Lake regions, and portions of Kodiak Island and adjacent areas. Interesting results were obtained throughout, with especially valuable and important materials coming from Kodiak Island, where abundant evidence was

found of a culture apparently of considerable age and showing interesting relationships on the one hand to the culture of the Eskimo and on the other to that of the inhabitants of the northwest coast area.

In view of the importance of the finds of 1931, Doctor Hrdlička returned to Alaska in May, 1932, on his fifth expedition to that interesting area, centering his efforts this year on the Kodiak Island deposits discovered at the close of the season last year. Through the interest of Mrs. Charles D. Walcott, he was provided with a small motor boat for use in the bays about the coast of the island. Brief reports that have come from the field indicate a most successful and fruitful season.

Dr. Walter Hough, head curator of the department of anthropology, spent a month examining the archeological field opened up around Tucson, Ariz., by Dr. Byron Cummings, where huge adobe walled ruins are being excavated. He also made a study of the valuable material in the museum of the University of Arizona.

Work abroad in the interests of the Springer collection, again undertaken by Dr. R. S. Bassler, head curator of the department of geology, embraced a study of the crinoid collections of various museums, particularly in England, Austria, and Hungary, and explorations in certain of the classic geologic areas of these countries. Incidental to the main object of his trip, he perfected arrangements for exchanges of material and made various collections, particularly of microfossils. He also took advantage of the opportunity to visit and consult with Dr. Ferdinand Canu at Versailles, a collaborator for many years, who died on February 12, 1932. The entire trip was very productive and resulted in many casts of fossil echinoderm types, particularly Silurian crinoids hitherto lacking in the collections.

During the first four months of the year Dr. W. F. Foshag, curator of mineralogy and petrology, was engaged in explorations in the States of Coahuila, San Luis Potosi, Zacatecas, and Queretaro, Mexico, under the auspices of the Roebling fund of the Smithsonian Institution. He obtained for the collection complete series of the rocks and ores of the districts visited.

Incidental to a trip to Moneta, Va., to bring to the Museum a large feldspar crystal, James Benn, junior aid in the department of geology, collected some excellent minerals. Later he accompanied Doctor Foshag on a brief trip to Amelia, Va., and at the end of the year collected in southern New York and northern New Jersey. Of particular interest are fine examples of fluorescent minerals obtained at Franklin Furnace, N. J.

Late in the year, E. P. Henderson, assistant curator of physical and chemical geology, traveling under the Canfield fund of the Smith-

sonian Institution, was detailed to collect in Montana, Utah, and Colorado, with certain needs of the collections as his objective. He was accompanied by F. A. Gonyer, representing the mineralogical department of Harvard University.

For the advancement of his work on the Cambrian, Dr. Charles E. Resser, curator of stratigraphic paleontology, spent four months in a study of early Paleozoic fossils in European museums and in consultation with geologists concerning the local stratigraphy of the neighboring areas. His work began in Norway and Sweden and extended to Czechoslovakia, Poland, Estonia, Germany, and England. The major objectives of his trip were attained to a gratifying degree, and much new material was obtained for the Museum by exchange.

The field activities of Dr. G. A. Cooper, assistant curator of stratigraphic paleontology, were confined to his vacation time, when he collected at his own expense in classical Devonian localities in New York State, obtaining material known to be lacking in the Museum collections. At the close of his work he presented to the Museum more than 2,500 specimens as a result of three weeks' collecting.

The field explorations of C. W. Gilmore, curator of vertebrate paleontology, begun in May last year, extended well into the period of the present report, only brief mention of it having been made previously. The expedition, covering the Miocene and Oligocene formations of southwestern Montana and the Wasatch of the Big horn Basin, Wyo., met with gratifying success. The material collected had a combined weight of 3,463 pounds and filled 15 cases, and included many specimens that will fill long-existing gaps in the collections. It is anticipated that study will show many undescribed forms to be present.

Excavations were continued in the fossil-horse quarry near Hagerman, Idaho, under the direction of Norman H. Boss, chief preparator in the division of vertebrate paleontology, with outstanding results. Collections exceeded in both quantity and quality those of the previous two seasons. Four more or less complete articulated skeletons, 32 skulls, 48 jaws, and a vast assemblage of skeletal parts filled 37 cases and had a total weight of 8,332 pounds.

The Walter Rathbone Bacon traveling scholarship under the Smithsonian Institution has been awarded for the current period to Alan Mozley for study of the land and fresh-water molluscan fauna of Siberia. Mr. Mozley left for the field in the spring of 1932 and proceeded to Tomsk, Siberia, where he established headquarters for this year's exploration. He intends to make an expedition to the mouth of the river Ket, and later, after returning to Tomsk, to make an excursion south into the Akhkolinsk Steppe. He reports cordial cooperation of local authorities and scientific institutions.

Dr. J. M. Aldrich, curator of insects, in July was occupied in collecting Diptera in the Gaspé Peninsula of eastern Quebec. He obtained a large number of flies and established the fact that many southern species have a much wider distribution northward than has hitherto been supposed, though the lower St. Lawrence River appears to form a sufficient barrier against the spread of the northern flies southward, as no striking forms of the Labrador fauna were found.

Dr. Paul Bartsch, curator of mollusks, with financial assistance from the Carnegie Institution of Washington, again visited the Florida Keys to examine the *Cerion* colonies planted during previous years to determine the effect on these mollusks of changes in environment, as well as of hybridization, a work in which the Smithsonian Institution and the Carnegie Institution have cooperated since 1912. This year's work occupied most of August and September and resulted in important specimens and observations.

Gerrit S. Miller, jr., curator of mammals, traveling at his own expense, with some assistance from the Smithsonian Institution for the hire of labor, visited Puerto Rico during March and April to continue his studies of the recently extinct mammal fauna of the Greater Antilles. Important localities were investigated and many specimens were obtained representing mammals, reptiles, amphibians, plants, and aboriginal artifacts.

Dr. Waldo L. Schmitt, curator of marine invertebrates, with the cooperation of the Carnegie Institution of Washington, spent eight weeks in the latter part of the summer of 1931 at the Carnegie Marine Laboratory at Tortugas in continuation of a survey of the carcinological fauna of the Tortugas region. Dr. A. S. Pearse, of Duke University, was occupied at the same laboratory investigating a number of ecological and environmental problems involving several invertebrate animals, the material collected by both workers coming to the National Museum. Important collections have come to the Smithsonian through this cooperation.

Dr. Hugh M. Smith, in Siam, continued explorations throughout the year, sending large collections of vertebrates and also of mollusks to the Museum. Numerous forms new to science have been obtained, and, thanks to Doctor Smith, the Museum is obtaining excellent representation of the life of a region from which it had previously possessed little material.

The expedition of Dr. W. M. Mann, director of the National Zoological Park, to British Guiana during August and September for the purpose of collecting live animals, resulted indirectly in our receiving several interesting accessions, as desirable animals that die in captivity at the park are transmitted to the Museum. The present lot included a fine series of the celebrated Surinam toad.

W. G. Sheldon and Richard Borden, interested particularly in mammals, at their own expense arranged a three months' trip into northeastern British Columbia, where they secured for the Museum an especially interesting collection. The party followed the Peace River to the mouth of Aylard Creek and then continued across Laurier Pass to the headwaters of Prophet River. On the return they covered the lower country to the north of Hudson Hope. Their principal objective, in which they were highly successful, was to obtain specimens of a peculiar form of mountain sheep, and as representative a series of other mammals as possible. The collections, including certain birds as well as mammals, were presented to the National Museum, and they have added materially to our series. Thanks are due the Canadian Government for the necessary permits to take scientific specimens.

Dr. A. Wetmore, assistant secretary, at the end of May visited the Bear River marshes at the northern end of Great Salt Lake, Utah, where he obtained various specimens of birds required in the Museum series. The region is one famous for its waterfowl, being now in large part included in a Federal refuge, and is an area from which the Museum has extensive collections.

EDUCATIONAL WORK

The National Museum during the year continued its customary activities in educational lines. Our exhibition halls display great series of objects so arranged as to demonstrate facts of many kinds, on subjects ranging from the tools and dress of primitive man to complicated modern machinery, examples of the life of strange lands, of the elements that compose our earth, fossil animals and plants of former ages, and many other things. Descriptive labels accompany all these, and there is constant shift and change to keep them properly arranged and up to date. The whole serves as a compendium of reference to the student or as an attractive display to the one of more casual interest, from which all may profit according to their desires.

In addition, the Museum is constantly active in the dissemination of knowledge in response to many hundreds of inquiries that come by mail or from the dozens of visitors. Classes from the city schools are guided through the halls, and groups of students from a distance are given similar service. Although the Museum does not maintain regular series of lectures, members of the staff are called on regularly to address meetings. Students throughout the country interested in definite problems come to work with our collections and libraries, and frequently workers from abroad are

engaged in investigations here that sometimes continue for months. Thus it may be seen how widely varied is the range of our educational activities and how extensive the field that they cover.

VISITORS

The Museum buildings were open to visitors during the year as usual on week days from 9 a. m. to 4.30 p. m. and on Sundays from 1.30 p. m. to 4.30 p. m., with the exception of the Aircraft Building, which was open only on week days. All the buildings were closed to the public on Christmas and New Year's Days.

A total of 1,630,030 persons visited the various Museum buildings during the year, or 39,110 less than during 1930-31. The average attendance for week days was 4,237 and for Sundays 5,927. The number of visitors to the Smithsonian Building on week days was 193,346, a daily average of 620, and on Sundays 48,498, an average of 933; to the Arts and Industries Building, 541,529 on week days (average, 1,736) and 133,906 on Sundays (average, 2,575); to the Natural History Building, 474,722 on week days (average, 1,522) and 125,813 on Sundays (average, 2,419); and to the Aircraft Building, 112,216, a daily average of 360.

Tables 1 and 2 show, respectively, the numbers of visitors during each month for the past year and for each year since 1881, when the building now devoted to arts and industries was first opened to the public.

TABLE 1.—*Visitors to Museum buildings during the year ended June 30, 1932*

Year and month	Smithsonian Building	Museum buildings			Total
		Arts and Industries	Natural History	Aircraft	
1931					
July	29, 473	84, 142	61, 558	14, 566	189, 739
August	37, 303	93, 636	79, 776	18, 278	228, 993
September	26, 964	76, 275	59, 749	12, 027	175, 015
October	17, 390	51, 035	44, 274	7, 615	120, 314
November	13, 189	37, 599	39, 674	3, 960	94, 422
December	11, 045	27, 232	27, 627	5, 595	71, 499
1932					
January	9, 977	26, 549	28, 865	5, 307	70, 698
February	15, 333	34, 904	39, 445	6, 118	95, 800
March	17, 978	49, 096	51, 096	9, 611	127, 781
April	27, 058	80, 846	71, 170	9, 775	188, 849
May	20, 113	66, 872	59, 437	10, 989	157, 411
June	16, 021	47, 249	37, 864	8, 375	109, 509
Total	241, 844	675, 435	600, 535	112, 216	1, 630, 030

TABLE 2.—*Visitors to the Smithsonian and Museum Buildings since 1881*

Year	Smithsonian Building	Museum buildings			Total
		Arts and Industries	Natural History	Aircraft	
1881	100,000	150,000			250,000
1882	152,744	167,455			320,199
1883	104,823	202,188			307,011
1884 (half year)	45,565	97,661			143,226
1884-85 (fiscal year)	105,993	205,026			311,019
1885-86	88,960	174,225			263,185
1886-87	98,552	216,565			315,114
1887-88	102,863	249,665			352,528
1888-89	149,618	374,843			524,461
1889-90	120,894	274,324			395,218
1890-91	111,669	286,426			398,095
1891-92	114,817	269,825			384,642
1892-93	174,188	319,930			494,118
1893-94	103,910	195,748			299,658
1894-95	105,658	201,744			307,402
1895-96	103,650	180,505			284,155
1896-97	115,709	229,606			345,315
1897-98	99,273	177,254			276,527
1898-99	116,912	192,471			309,383
1899-1900	133,147	225,440			358,587
1900-1901	151,563	216,556			368,119
1901-2	144,107	173,888			317,995
1902-3	181,174	315,307			496,481
1903-4	143,988	220,778			364,766
1904-5	149,380	235,921			385,301
1905-6	149,661	210,886			360,547
1906-7	153,591	210,017			363,608
1907-8	237,182	299,659			536,841
1908-9	198,054	245,187			443,241
1909-10	179,163	228,804	50,403		458,370
1910-11	167,085	207,010	151,112		525,207
1911-12	143,134	172,182	281,887		597,203
1912-13	142,420	173,858	319,806		636,084
1913-14	102,645	146,533	329,381		578,559
1914-15	40,324	133,202	321,712		495,238
1915-16	48,517	146,956	381,228		576,701
1916-17	86,335	161,700	407,025		655,060
1917-18	67,224	161,298	401,100		629,622
1918-19	101,504	266,532	¹ 132,859		500,895
1919-20	86,013	250,982	422,984		759,979
1920-21	90,235	286,397	467,299	31,235	875,166
1921-22	83,384	262,151	441,604	46,380	833,519
1922-23	95,168	259,542	508,518	42,904	906,132
1923-24	104,601	290,012	540,776	43,534	978,923
1924-25	107,342	304,858	557,016	52,787	1,022,003
1925-26	110,975	355,762	581,563	58,005	1,106,305
1926-27	128,868	380,430	561,286	82,628	1,153,212
1927-28	175,190	517,238	618,773	102,185	1,413,386
1928-29	277,295	868,952	650,815	132,563	1,929,625
1929-30	282,482	863,479	625,326	123,700	1,894,987
1930-31	258,616	731,186	631,498	² 47,840	1,669,140
1931-32	241,844	675,435	600,535	112,216	1,630,030
Grand total	6,878,009	14,363,599	9,984,506	875,977	32,102,088

¹ Building open for only 3 months of the year.² Building open for only 4 months of the year.

PUBLICATIONS

The publications issued during the year include 11 volumes, as follows: The Annual Report for 1931; a small edition for office use of Bulletin 100, volume 2, Papers on Collections Gathered by the "Albatross" Philippine Expedition 1907-1910, by Maynard M. Metcalf, Hoyt S. Hopkins, H. V. Wilson, and Paul Bartsch; Bulletin 104, part 8, The Foraminifera of the Atlantic Ocean, Rotaliidae to Homotremidae, by Joseph A. Cushman; Bulletin 156, Aboriginal Indian Pottery of the Dominican Republic, by Herbert W. Krieger; Bulletin 157, The Butterflies of the District of Columbia and Vicinity, by Austin H. Clark; Bulletin 159, The Birds of the Natuna Islands, by Harry C. Oberholser; Bulletin 160, Mexican Tailless Amphibians in the United States National Museum, by Remington Kellogg; Bulletin 161, part 1, The Foraminifera of the Tropical Pacific Collections of the "Albatross," 1899-1900, Astrorhizidae to Trochamminidae, by Joseph A. Cushman; Bulletin 162, Life Histories of North American Gallinaceous Birds, by A. C. Bent; and small editions for office use of the complete volumes 77 and 78 of the Proceedings of the National Museum. Fifty-six separate papers published include 1 in the Contributions from the National Herbarium, 2 in the Bulletins, and 53 in the Proceedings.

The distribution of volumes and separates to libraries and individuals on the regular mailing lists aggregated 101,975 copies, while in addition 18,805 copies of publications issued during this and previous years were supplied in response to special requests. The mailing lists have been carefully revised to avoid loss in distribution.

During the year 792,831 forms, labels, and other items were printed and 2,976 volumes were bound.

LIBRARY

At the close of the last fiscal year the Museum library contained 82,144 volumes and 109,962 pamphlets. The accessions for the year were 2,737 volumes and 833 pamphlets, or 210 more than in 1931. Most of these were purchased or received in exchange. Many, however, were gifts, especially from the members and associates of the Museum staff, among whom were Secretary Abbot, Assistant Secretary Wetmore, Dr. R. S. Bassler, Dr. Marcus Benjamin, A. H. Clark, W. L. Corbin, Dr. Herbert Friedmann, Miss Kate Gallaher, Dr. Aleš Hrdlička, Neil M. Judd, Dr. W. R. Maxon, G. S. Miller, jr., C. W. Mitman, A. J. Olmsted, W. deC. Ravenel, and J. H. Riley. A large number were also given by Mrs. Charles D. Walcott, and others by Dr. Adam G. Böving, A. N. Caudell, A. H. Howell, and

Dr. William Schaus, of the Department of Agriculture. Special mention should be made of the gift of more than 100 volumes and pamphlets, at least one-half of which were old and rare works on natural history, from the late Dr. Charles W. Richmond. Doctor Richmond will be greatly missed by the library. His knowledge of books, which was unusually extensive and by no means confined to the field of his main interest, he was always glad to share with others. During his long connection with the Museum he enriched the library with many hundreds of publications, some of very great value, which he had obtained, often after much search and at no small cost to himself, from dealers at home and abroad.

The regular work of the library and the special tasks for the year made unusual demands on the staff. They entered 9,025 periodicals, an increase of 226 over the year before; catalogued or recatalogued 2,236 volumes, 1,006 pamphlets, and 17 charts—a total of 3,259, or 818 more than in 1931; added 12,055 cards to the catalogue, or 862 more than the previous year, and 1,244 cards to the Museum shelf lists, besides preparing 1,741 for the union shelf list in the Smithsonian Building. They also entered 387 periodicals and catalogued 91 volumes and 84 pamphlets for the National Gallery of Art. They sent to the 35 sectional libraries for their permanent files 5,726 volumes and parts and to the curators and their assistants for their private collections several hundred reprints, which had come to light in the course of sorting some of the miscellaneous material in the library. They filed 7,268 *Concilium Bibliographicum* cards of the author set, and forwarded those in the systematic set, as they were received, to the sections concerned. They also filed 361 Wistar Institute cards. The number of volumes sent to the bindery was 1,480—an increase of 78 over 1931. About 465 others were prepared for binding but, owing to lack of funds, had to be held over until the next fiscal year. The staff made steady progress in revising the periodical record and in checking the standard sets. The result was extremely gratifying, for, in response to the 178 want slips prepared and the letters based upon them, they obtained in exchange 1,377 volumes and parts needed by the library—an increase of 287 over the number obtained the year before. In addition, they arranged for 100 new exchanges of publications on behalf of the Museum.

The work at the two loan desks—the New Museum and the Old Museum—likewise showed a marked increase, the total number of loans to the staff of the Smithsonian Institution and its bureaus being 9,096, as against 7,221 in 1931. Of these more than one-third were charged in the library of the Arts and Industries Building. Of the items loaned, 2,662 were borrowed from the Library of Congress—613 more than the year before—and 477 elsewhere—206 more

than the previous year. The number returned to the Library of Congress was 2,800, and to other libraries 532, or 281 and 125, respectively, in excess of those in 1931. Many of the publications borrowed came, as usual, from the Department of Agriculture, the Geological Survey, and the Army Medical Museum, but not a few had to be obtained from libraries outside of Washington. Among these were the Boston Public Library, the Cleveland Public Library, the New York Public Library, and the libraries of the American Geographical Society, the American Museum of Natural History, the Arnold Arboretum, the Boston Society of Natural History, Columbia University, Cornell University, Harvard College, Johns Hopkins University, Massachusetts Institute of Technology, Museum of Comparative Zoölogy, University of Michigan, and Yale University. Loans of publications also were made to a number of libraries not in Washington, including those of Carnegie Museum, Dartmouth College, Ohio Experiment Station, Pennsylvania State College, Storrs Agricultural Station, and the following universities: Johns Hopkins, Kansas, Maryland, Michigan, North Carolina, Oklahoma, Pittsburgh, Virginia, Western Reserve, and Yale. The inter-library loan correspondence involved the filling out of several hundred forms and, in the case of out-of-town libraries, the writing of 281 letters.

The task of rearranging the files was continued, as was that of sorting the remaining collections of miscellaneous material. In connection with the latter, a large number of publications that were needed in the library were found, while many that had no value to the Smithsonian Institution or its bureaus were transferred to other Government libraries, including 637 to the library of the Geological Survey and 332 to that of the Patent Office. Still others will be transferred as the work of reorganizing the library in the Arts and Industries Building progresses. In this library 616 feet of steel shelving were installed. More should be put in as soon as funds become available, to provide for the safe and uncrowded shelving of this unit and to make it easier for the staff to apply modern library methods to its various collections.

Owing to the increased work in the main library, it was not possible for the staff to undertake many special tasks in the sectional libraries. They managed to make considerable progress, however, in classifying and cataloguing the books in the division of plants and in preparing cards for the pamphlet collection in the division of mammals. There were several changes in the sectional libraries themselves. Those of mechanical technology and mineral technology were consolidated into that of engineering, and those of American archeology and Old World archeology into that of archeology, and a

sectional library of agricultural history was started. These libraries at the close of the year numbered 35 and were as follows:

Administration.	Invertebrate paleontology.
Administrative assistant's office.	Mammals.
Agricultural history.	Marine invertebrates.
Anthropology.	Medicine.
Archeology.	Minerals.
Biology.	Moliusks.
Birds.	Organic chemistry.
Botany.	Paleobotany.
Echinoderms.	Photography.
Editor's office.	Physical anthropology.
Engineering.	Property clerk's office.
Ethnology.	Reptiles and batrachians.
Fishes.	Superintendent's office.
Foods.	Taxidermy.
Geology.	Textiles.
Graphic arts.	Vertebrate paleontology.
History.	Wood technology.
Insects.	

Two changes occurred in the staff. Miss Kate Gallaher, under library assistant, was transferred to the retirement list after 50 years of faithful service with the Government, nearly all of which had been in the Museum and other libraries of the Smithsonian Institution. Her position was filled by the promotion of Miss Virginia C. Whitney, minor library assistant in the Astrophysical Observatory.

PHOTOGRAPHIC LABORATORY

The photographic laboratory of the National Museum during the year made 2,811 negatives, 19,356 prints, 741 lantern slides, and 124 enlargements; developed 159 rolls of film, 77 film packs, and 48 cut films; and dry mounted 14 prints. As compared with the previous year, more negatives but fewer prints were made, with not so many jobs coming in from the field. This work was required by the National Museum and by the National Gallery of Art and the Bureau of American Ethnology, whose photographic needs are served by the laboratory through a cooperative arrangement. Calls for photostat work continue, but if this service is to be added to the work of the laboratory another employee will be required.

BUILDINGS AND EQUIPMENT

Building repairs and alterations.—The erection of the steel galleries in the Natural History Building for the mammal collections, mentioned in last year's report as having been begun, was completed at the end of August, 1931. As soon as the mammal-storage cases had been placed on the ground and gallery floors all the exposed

surfaces were painted and enameled and the walls and ceilings of the ranges and all the adjoining rooms in the division of mammals and the Biological Survey offices were painted. In addition, an office room was built on the west side of the northwest range.

A good deal of other necessary painting was done throughout the Natural History Building, including the north hall and north alcove, first floor; the west-north and northwest ranges, second floor; north side of auditorium corridor; and the Casey room.

A pneumatic collecting and conveying system for removing sawdust from the two woodworking rooms in the carpenter shop was installed.

In the Arts and Industries Building needed painting was done in the southwest and northwest courts, north hall, room 60, and in the offices of the associate director and the division of engineering. Repairs were made to the platform at the north entrance and to the smokestack on the roof of the southwest pavilion.

A steel framework was constructed on the concrete floor in front of the wall on the south side of the Aircraft Building in order to shift the weight of the large water feed pipes of the automatic sprinkler system from the roof trusses to the building floor.

Heat, light, and power.—The plant in the Natural History Building for furnishing heat, light, and power to the group of Smithsonian buildings was in operation during the year except from July 1 to September 29, 1931, and from May 27 to June 30, 1932.

Steam was turned on the line to the older buildings and the Freer Gallery of Art on September 30, but because of trouble in the automatic steam-pressure regulator, it was kept off for several days except when steam was actually needed for heating these buildings, when steam flow was regulated by hand. After repairs and adjustments were made, steam was turned on again on October 5 and was kept on continuously until May 27.

The consumption of coal was less than during the preceding year, owing to the mild winter and to minor savings brought about by more careful operation. For heat, light, and power production 3,220.4 tons of bituminous coal were purchased at \$5.03 a ton.

The electric current purchased for the Arts and Industries Building throughout the year amounted to 124,340 kilowatt-hours and cost \$3,751.10, while the current purchased during the summer for the other buildings was 274,300 kilowatt-hours and cost \$4,338.72, which makes a total cost for electric current purchased of \$8,089.82, or 2.03 cents a kilowatt-hour. This is considerably more than the cost of the current generated in the Museum plant, where 628,578 kilowatt-hours of current were produced at a cost of 1.65 cents a kilowatt-hour.

The National Gallery of Art assisted in the purchase of electric current and lamps to the extent of slightly more than \$1,000.

The increase in the consumption of electric current has made it advisable to increase the size of the cables connecting with the Potomac Electric Power Co. lines entering the north side of the Natural History Building. During the year two additional cables of 1,000,000 circular mils each were purchased, making a total of 3,500,000 circular mils cables on each side of the lines entering the building, which should be sufficient to take care of a normal increase of 20 per cent. It still remains advisable to increase the neutral or middle line by about 500,000 circular mils.

To serve better the small illuminating lamps for microscopes used by the division of insects on the third floor of the Natural History Building, alternating current was brought from the Smithsonian Building through the tunnel and connected to the individual lamps through alternating-current transformers.

Progress was made in the rewiring of the Arts and Industries Building, which was begun several years ago. The entire northeast pavilion, north front rooms and gallery of the north hall, the library, and part of the southeast range gallery were rewired to eliminate exposed wires and wooden molding.

Ice plant.—The machine for manufacturing ice for all the Museum buildings, located in the Natural History Building, was operated 3,864 hours during the year and produced 424.2 tons of ice at a cost of \$1,001.11, or at the rate of \$2.35 a ton. A new double-pipe ammonia condenser was installed, and the operation of the ice plant has thereby been made much more efficient, so that it is now possible to produce more ice an hour than for the past several years. In extremely hot weather a small quantity of ice had to be bought, as the capacity of the machine could not meet the demands.

Fire protection.—Customary inspections of the various types of fire detecting and protection equipment were made in the several buildings during the year. The portable acid-soda extinguishers were discharged, cleaned, and recharged, and only one failed to discharge properly. The extinguishers in the engine room and in the auditorium picture booth were overhauled and given a new charge of liquid. The small portable fire engines distributed around the rotunda were overhauled and the compressed-air cylinders inspected.

The new sprinkler system installed in the Aircraft Building has worked satisfactorily and required little attention. In June the system was tested, and it was found that 45 seconds were required from the time the most remote head was opened until the full flow of water was established.

The electrically driven fire pump bought last year has been tested once a week and kept in good condition. It can be operated from the telephone room by remote-control push buttons. It took con-

siderable time to get this pump to work properly in conjunction with the old steam-driven fire pump, but as now arranged they can be operated singly or together.

The fire alarms in all the buildings were tested four times during the year, and with one exception all worked satisfactorily.

On July 9, 1931, a report on fire hazards in the Smithsonian group of buildings was submitted to the Secretary by the chairman of the Federal Fire Council, based on extensive and careful surveys by members of the fire-hazards committee and the apparatus and appliance committee of the council. Fifty specific recommendations were made for changes with a view to better fire protection, along the following lines: (1) Fire-door, cut-off, and other structural changes; (2) automatic sprinkler installation and automatic fire detection; (3) electrical changes; (4) water supply for fire fighting; (5) replacement of wooden by steel furniture. The estimated cost for making the recommended alterations for the entire group of buildings is \$152,825. Although none of the major items recommended has been accomplished, because of lack of necessary funds, a small beginning has been made, and a number of fire hazards have been eliminated and fire protection improved in several of the buildings.

Furniture and fixtures.—The furniture added during the year included 21 exhibition cases and bases; 350 pieces of storage, laboratory, office, and other furniture; and 2,317 drawers of various kinds. During the same period 25 exhibition cases and bases; 20 pieces of storage, laboratory, office, and other furniture; and 57 drawers were condemned as unfit for further use.

An inventory of furniture on hand on June 30, 1932, showed 3,752 exhibition cases and bases; 16,729 pieces of storage, laboratory, office, and other furniture; and 100,801 drawers, boxes, and frames of various kinds.

Flags on buildings.—The flags on the Smithsonian and National Museum buildings were flown at half-mast on Memorial Day from 8.30 a. m. to noon. On Christmas and New Year's Days the flags were not hoisted, as all the buildings were closed to the public. On March 6 and 7, 1932, the flags had to be left at full mast all day and all night on the poles of the Arts and Industries and Smithsonian Buildings, as the halyards were frozen.

MEETINGS AND RECEPTIONS

The United States National Museum offers the facilities of its well-equipped auditorium and lecture room to scientific and educational organizations for regular and special meetings and assists so

far as possible in carrying out their programs. The auditorium and lecture room were so utilized on 118 occasions during the year, as follows:

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July 20, 9 a. m. (room 43) : Fisher Body Craftsman's Guild. Coach models, made by District of Columbia boy members of the Guild, judged.

September 15, 9.30 a. m. (room 43) : Plant Quarantine and Control Administration, United States Department of Agriculture. Conference on phony peach disease.

September 19, 4.45 p. m. (room 43) : Helminthological Society of Washington.

October 1, 8 p. m. (room 43) : Entomological Society of Washington. Motion pictures shown.

October 3, 2 p. m. (room 43) : National Association of Retired Federal Employees.

October 8, 10 a. m. (auditorium) : Plant Quarantine and Control Administration, United States Department of Agriculture.

October 13, 4.45 p. m. (room 43) : Society for Philosophical Inquiry.

October 16, 4.45 p. m. (room 43) : Helminthological Society of Washington.

October 20, 8 p. m. (room 43) : Anthropological Society of Washington.

October 23, 3 p. m. (auditorium) : Department of Agriculture Graduate School. Address by Dr. Jakob E. Lange, of Denmark, on The Folk High School and its Influence on Rural Life and Work.

October 23, 8 p. m. (room 43) : Botanical Society of Washington. Illustrated address by Dr. Jakob E. Lange, of Denmark, on Comparative Studies of European and American Mushrooms and Toadstools.

October 26, 11.30 a. m. (room 43) : Smithsonian Institution Relief Association.

November 5, 8 p. m. (room 43) : Entomological Society of Washington.

November 7, 2 p. m. (room 43) : National Association of Retired Federal Employees.

November 7, 3.30 p. m. (room 43) : Boy Scouts. Address by H. G. Richards on Deep-sea Diving.

November 7, 8 p. m. (room 43) : American Rose Society. Address by Robert Pyle on Roses.

November 10, 3 p. m. (auditorium) : Department of Agriculture Graduate School. Illustrated lecture by Dr. M. C. Raymond.

November 10, 4.45 p. m. (room 43) : Society for Philosophical Inquiry.

November 11, 3 p. m. (room 43) : Department of Agriculture Graduate School. Illustrated lecture by Dr. M. C. Raymond.

November 17, 8 p. m. (room 43) : Anthropological Society of Washington.

November 21, 1.15 p. m. (room 43) : Boy Scouts.

November 23, 7.30 p. m. (auditorium) : District of Columbia, Alexandria, and Clarendon Business Women's Clubs. Motion pictures on care of children shown. Short addresses by Dr. Louise Stanley, Miss Katherine Lenroot, and Miss Mary Anderson.

November 27, 10 a. m. (auditorium) : American Forestry Notebook Contest. Prizes awarded.

December 2, 11.30 a. m. (auditorium) : United States Forest Service. Motion pictures on forestry shown by Harry Irvin.

December 3, 8 p. m. (room 43) : Entomological Society of Washington.

December 5, 2 p. m. (room 43) : National Association of Retired Federal Employees.

December 8, 4.45 p. m. (room 43) : Society for Philosophical Inquiry.

December 15, 8 p. m. (auditorium) : Anthropological Society of Washington. Illustrated lecture by Dr. Edward Sapir, of Yale University, on The Indians of the North Pacific Coast.

December 18, 8 p. m. (auditorium) : Smithsonian Institution and Research Corporation of New York. Presentation by Chief Justice Charles Evans Hughes of Research Corporation awards for 1930 to Dr. Andrew Ellicott Douglass, of the University of Arizona, and Dr. Ernst Antevs, of the University of Stockholm, Sweden. Address by Doctor Douglass on Tree Rings and by Doctor Antevs on Rock Age.

December 19, 7 p. m. (room 43) : Heliinthological Society of Washington.

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January 2, 2 p. m. (room 43) : National Association of Retired Federal Employees.

January 5, 8 p. m. (room 43) : Anthropological Society of Washington. Address by Dr. Robert H. Lowie, of the University of California, on The Indians of the Great Basin.

January 6, 3 p. m. (auditorium) : United States Department of Agriculture. Address by Dr. Clarence Birdseye on Quick Freezing and its Implications for the Distribution of Food Products.

January 7, 8 p. m. (room 43) : Entomological Society of Washington.

January 12, 4.45 p. m. (room 43) : Society for Philosophical Inquiry.

January 16, 7 p. m. (room 43) : Heliinthological Society of Washington.

January 19, 8 p. m. (auditorium) : Anthropological Society of Washington. Illustrated lecture by Dr. Robert H. Lowie, of the University of California, on Indians of the Northern Plains.

January 21, 8 p. m. (room 43) : Wild Flower Preservation Society, Inc.

January 26, 8.15 a. m. (auditorium) : National Symphony Orchestra of Washington. Rehearsal.

January 27, 8 p. m. (auditorium) : Smithsonian Institution, First Arthur Lecture. Illustrated address by Dr. Henry Norris Russell on Composition of the Sun.

February 2, 8.20 a. m. (auditorium) : National Symphony Orchestra of Washington. Rehearsal.

February 4, 8 p. m. (room 43) : Entomological Society of Washington.

February 6, 2 p. m. (room 43) : National Association of Retired Federal Employees.

February 6, 13, and 27, 3.30 p. m. (room 43) : Boy Scouts. Illustrated lecture on February 27 by Dr. R. S. Bassler.

February 9, 4.45 p. m. (room 43) : Society for Philosophical Inquiry.

February 10, 3 p. m. (auditorium) : United States Department of Agriculture. Address by Dr. Mordecai Ezekiel on Farming in Russia.

February 11, 8 p. m. (auditorium) : Anthropological Society of Washington. Address by Dr. Alfred L. Kroeber, of the University of California, on The Indians of California.

February 20, 1.30 p. m. (auditorium) : Organization of Professional Employees of the United States Department of Agriculture.

February 20, 7 p. m. (room 43) : Heliinthological Society of Washington.

February 22-24 (auditorium) : National Education Association of the United States. Sessions of annual convention.

February 24, 8 p. m. (auditorium) : Smithsonian Institution. Lecture by Dr. Aleš Hrdlička on Explorations in Alaska.

February 25, 8 p. m. (auditorium) : Anthropological Society of Washington. Illustrated lecture by Neil M. Judd and Dr. W. D. Strong on The Pueblo Indians of Arizona and New Mexico.

February 25, 8 p. m. (room 43) : Wild Flower Preservation Society, Inc. Illustrated lecture by P. L. Ricker on Wild Flowers.

February 27, 1.30 p. m. (auditorium) : Organization of Professional Employees of the United States Department of Agriculture.

March 2, 11.30 a. m. (auditorium) : United States Forest Service. Illustrated lecture by Will C. Barnes on his trip around the world.

March 3, 8 p. m. (room 43) : Entomological Society of Washington.

March 5, 2 p. m. (room 43) : National Association of Retired Federal Employees.

March 8, 4.45 p. m. (room 43) : Society for Philosophical Inquiry.

March 12 and 19, 3.30 p. m. (room 43) : Boy Scouts.

March 15, 8 p. m. (room 43) : Anthropological Society of Washington.

March 17, 8 p. m. (room 43) : Potomac Garden Club.

March 18, 3 p. m. (auditorium) : Department of Agriculture Graduate School. Address by Dr. Paul O. Nyhus on Chinese Agriculture.

March 18, 8 p. m. (auditorium) : National Capital Park and Planning Commission. Illustrated lecture by Charles W. Eliot, 2d, on Parks and Planning.

March 19, 7 p. m. (room 43) : Helminthological Society of Washington.

March 21-23 (room 43 and auditorium) : American Association of Physical Anthropologists. Sessions of annual meeting.

March 24-28 (room 43 and auditorium) : Plant Quarantine and Control Administration, United States Department of Agriculture. Four meetings.

March 29, 8 p. m. (room 43) : Wild Flower Preservation Society, Inc. Illustrated lecture by Dr. E. T. Wherry on Wild Flowers of the Western States.

March 30, 8 p. m. (auditorium) : Smithsonian Institution. Illustrated address by Dr. A. C. Seward on Plant Records of the Rocks.

April 1, 8 p. m. (auditorium) : National Capital Park and Planning Commission. Address with motion pictures by Lieut. Col. U. S. Grant, 3d, on The Process of Developing the Parks of the District of Columbia.

April 2, 2 p. m. (room 43) : National Association of Retired Federal Employees.

April 6, 11.30 a. m. (auditorium) : United States Forest Service. Address by Herbert A. Smith on Publications Criticizing Public Employees and Waste of Money.

April 7, 8 p. m. (rooms 43 and 44) : Entomological Society of Washington.

April 12, 4.45 p. m. (room 43) : Society for Philosophical Inquiry.

April 15, 8 p. m. (auditorium) : National Capital Park and Planning Commission. Motion pictures by Charles W. Eliot, 2d, on the parks of Washington, D. C.

April 16, 7 p. m. (room 43) : Helminthological Society of Washington.

April 19, 8 p. m. (room 43) : Anthropological Society of Washington.

April 21, 3 p. m. (auditorium) : Ninth National Oratorical Contest. Contest of speakers from private and parochial schools of Washington, D. C., won by the representative from the Woodward School.

April 22, 8 p. m. (auditorium) : National Capital Park and Planning Commission.

April 29, 4 p. m. (auditorium) : Smithsonian Institution. Address by M. W. Stirling on his seven months' exploring expedition in the jungles of Panama and South America.

May 3, 3 p. m. (room 43) : Motion pictures and lantern slides on Alaska shown by H. B. Collins, Jr., and I. M. Furness.

May 4-6 (room 43 and auditorium) : American Society of Mammalogists. Sessions of annual meeting.

May 5, 8 p. m. (room 43) : Entomological Society of Washington.

May 7, 2 p. m. (room 43) : Federal Employees Union No. 2, Agriculture Branch.

May 10, 10 a. m. (auditorium) : Ninth National Oratorical Contest. Local district contest.

May 10, 4.45 p. m. (room 43) : Society for Philosophical Inquiry.

May 10-12 (auditorium) : Home improvement lectures under auspices of Washington Times. Three addresses by B. C. Jakway on home furnishings.

May 13, 3.45 p. m. (auditorium) : District of Columbia Model Aircraft League. Prizes awarded and motion pictures shown.

May 13, 8 p. m. (auditorium) : Girl Scouts of Washington, D. C. Oratorical contest.

May 21, 7 p. m. (auditorium) : Helminthological Society of Washington.

May 26 and 27 (room 43) : American Malacological Union. Sessions of annual meeting.

June 2, 4 p. m. (room 43) : Smithsonian Institution. Addresses by Mr. and Mrs. L. O. Sordahl on their Astrophysical Observatory work in South Africa.

June 4, 2 p. m. (room 43) : National Association of Retired Federal Employees.

June 7, 12 noon (auditorium) : National Spelling Bee.

June 14, 10.30 a. m. (room 43) : Portrait of Maj. Gen. Charles J. Bailey, presented to the National Museum by the personnel of the Eighty-first Division, A. E. F., accepted by the Assistant Secretary.

June 14, 4.30 p. m. (room 43) : Society for Philosophical Inquiry.

June 15-21 (auditorium and room 43) : Sixth National 4-H Club Camp. Addresses and conferences.

June 22, 9 a. m. (auditorium) : National Extension Association.

Memorial meetings.—To commemorate the services of Dr. James Williams Gidley, assistant curator of mammalian fossils, who died on September 26, 1931, a memorial meeting was held on the morning of September 29. The assistant secretary presided, and the following among Doctor Gidley's associates paid tribute to his scientific attainments and to his personal qualities: Dr. Alexander Wetmore, Dr. R. S. Bassler, C. W. Gilmore, Dr. Paul Bartsch, and Dr. T. S. Palmer.

On May 20, 1932, a memorial meeting was held in commemoration of the life and works of Dr. Charles Wallace Richmond, associate curator of birds, who died on May 19, 1932. The meeting was presided over by Secretary Abbot, and the following men spoke in honor of Doctor Richmond: Dr. C. G. Abbot, Dr. Leonhard Stejneger, Dr. Herbert Friedmann, Dr. Paul Bartsch, H. W. Dorsey, Dr. T. S. Palmer, and W. L. McAtee.

Garfield anniversary.—A memorial meeting and reception on the occasion of the one-hundredth anniversary of the birth of James Abram Garfield, twentieth President of the United States, and of the fiftieth anniversary of the founding of Garfield Memorial Hospital were held in the auditorium, art gallery, and rotunda on the evening of May 26, 1932. Brief reminiscent tributes to President

Garfield were made by a number of Ohioans and addresses were delivered by Mrs. Cabot Stevens, Dr. Harry H. Kerr, Dr. Loren B. T. Johnson, and the Rev. Dr. James Shera Montgomery in behalf of Garfield's Living Monument in Washington—the Garfield Memorial Hospital. Refreshments were served to about 250 persons and music was furnished by a section of the Marine Band Orchestra.

Reception.—About 400 persons attended a reception held by the Rotary Club of Washington on the evening of May 10, 1932, in the art gallery, rotunda, and first floor of the Natural History Building. These rooms were especially illuminated to show the Bicentennial exhibition of sculpture, this being the first time that the Bicentennial art exhibit was so lighted at night for a public reception.

Special exhibits.—A forestry notebook contest, similar to the one held last year, under the auspices of the public schools of the District of Columbia, was held in the south end of the foyer of the Natural History Building from November 18 to 29, inclusive.

An exhibition of about 70 of the totem poles entered by the contestants in the Alaska totem pole carving contest, sponsored among the Boy Scouts of America by the United States Department of the Interior, the Alaska Railroad, the Alaska Steamship Co., and the Burlington and Northern Pacific Railways, was held in the foyer of the Natural History Building from April 1 to 15.

From May 12 to 16 the special exhibition space at the south end of the foyer was given over to an exhibit of garden models by the District of Columbia schools. These models were made by the school children in containers of uniform sizes and were displayed on temporary tables.

An exhibit arranged for by the committee on the Festival of Youth of the George Washington Bicentennial Commission was shown at the south end of the foyer from May 16 to 23. Black-and-white and colored drawings made by the pupils of the Washington high schools and examples of the work produced by the Washington manual-training schools were displayed. These included stools, tables, copper desk sets, steel gears, vises, jewelry, samples of sewing, and preserved fruit.

CHANGES IN ORGANIZATION AND STAFF

The organization of the National Museum is indicated in the list of the staff, given as of June 30, 1932, on the opening pages of this report. During the past year the general plan of arrangement has remained unaltered, though there have been a few minor changes in the scheme to bring certain elements into better alignment.

The divisions of mineral and mechanical technology in the department of arts and industries were consolidated on July 18, 1931, into one division under the title of division of engineering, with Carl W.

Mitman as curator. The new division operates under three sections—the section of mechanical technology, under Assistant Curator Frank A. Taylor; the section of aeronautics, under Assistant Curator Paul E. Garber; and the section of mineral technology, which for the present continues under the immediate charge of the curator, Mr. Mitman.

Changes in status among members of the staff during the year were as follows: Dr. T. Dale Stewart was promoted from aid to assistant curator in the division of physical anthropology on July 1, 1931; Horace G. Richards, who served as a senior scientific aid in the division of mollusks from October 5, 1931, was given appointment on March 16, 1932, as assistant curator of the division.

Vacancies occurring during the year in the scientific staff resulted in the appointment of Dr. Charles L. Gazin on March 1, 1932, to succeed the late Dr. James W. Gidley as assistant curator in the division of vertebrate paleontology, and the advancement of Joseph H. Riley on June 24, 1932, from assistant curator to succeed the late Dr. Charles W. Richmond as associate curator in the division of birds.

Honorary connection with the national collections was conferred on several scientists of note. Dr. C. W. Stiles, who had long served the Museum as custodian of the helminthological collections, was given the honorary designation of associate in zoology under the Smithsonian Institution, on his retirement from active Government service on October 1, 1931. Dr. Maurice C. Hall, of the United States Bureau of Animal Industry, who had been assistant custodian, was appointed to the custodianship of the helminthological collections on the same date. For some years the Museum has benefited through the personal efforts of Dr. David C. Graham, an American resident in China, who has systematically collected specimens for the national collections. His association with the Museum was recognized by an appointment on October 19, 1931, as collaborator in biology, an honorary title that was also extended at the same time to Dr. A. K. Fisher, for many years with the United States Biological Survey. Dr. C. Dwight Marsh, formerly of the United States Bureau of Plant Industry, was appointed custodian of fresh-water copepods in the division of marine invertebrates on July 10, 1931. His sudden death before the end of the year deprived the Museum of expert services in this line. In anthropology the honorary appointment of J. Townsend Russell as collaborator in Old World archeology was extended for one year from May 13, 1932.

Four employees retired during the year under the provisions of the civil service retirement act. Of these Charles S. Atkins, laborer, was retired for disability on July 31, 1931. Others were retired because of age limitation, as follows: Frederick W. Wilson, guard, on

September 30, 1931; Evan D. Lewis, guard, on November 30, 1931; and Miss Kate A. Gallaher, under library assistant, on December 31, 1931.

Under compulsory retirement for age provided as an economy measure in the legislative appropriation act for 1933, 12 employees went off the rolls at the close of the fiscal year, several having served the Museum long in positions of trust and authority. These were William deC. Ravenel, administrative assistant to the Secretary, with 48 years of service; Barton A. Bean, assistant curator of fishes, with 51 years of service; James G. Traylor, appointment clerk, with 50 years of service; Harry C. Taylor, chief of the paint shop, with 44 years of service; Andrew Lee Young, assistant to the engineer, with 41 years of service; Richard A. Allen, senior scientific aid in the department of anthropology, with 35 years of service; Carl A. Carlsson and Lewis Jones, guards; William Jones, undermechanic, with 23 years of service; and Charles S. Washington, Albert Strong, and James S. Peyton, laborers, with 36, 23, and 15 years, respectively.

Necrology.—The Museum lost through death five active workers and two honorary members of its staff, as follows: Dr. Charles W. Richmond, associate curator of birds, on May 19, 1932; Dr. James W. Gidley, assistant curator of mammalian fossils, on September 26, 1931; William S. Frazee, guard, on March 15, 1932; Michael A. Coleman, guard, on May 17, 1932; Mrs. Theresa Dimmick, forewoman of charwomen, on October 18, 1931; Dr. David Starr Jordan, associate in zoology, on September 19, 1931; and Dr. C. Dwight Marsh, honorary custodian of fresh-water copepods, on April 23, 1932.

By the death of Rudolf Eickemeyer, of Yonkers, N. Y., on April 24, 1932, the Museum lost a benefactor of note. A few years ago Mr. Eickemeyer gave the Museum his unique collection of pictorial photographs and historical specimens relating to photography, and by his will established a trust fund of \$10,000, the income of which, after the death of his widow, is to be used for the maintenance of collections in the section of photography.

Dr. James Williams Gidley, assistant curator of mammalian fossils, died on September 26, 1931, at the age of 65 years, after an illness of several months. Doctor Gidley's life work was centered in the science of vertebrate paleontology, fossil Mammalia being his specialty. He was an authority on fossil horses, his models, showing the evolution of that animal, having found a place in many leading museums and other educational centers. His researches in Florida in recent years, where he demonstrated the contemporaneity of early man with the Pleistocene mammals, are among his outstanding achievements.

Doctor Gidley was educated in the common schools of Iowa, his native State, and received the degrees of bachelor of science and

master of science at Princeton University and of doctor of philosophy at George Washington University. His first professional work was with the American Museum of Natural History in New York. He entered the service of the United States National Museum on February 15, 1905, as preparator in the section of vertebrate paleontology, department of geology. On November 1, 1907, he was promoted to custodian of the collection of fossil mammals in the division of vertebrate paleontology, and on July 20, 1911, became assistant curator of mammalian fossils, a position that he held until his death. Possessed of a lovable character, he endeared himself to all with whom he associated. His loss has been keenly felt by those who had the privilege of his friendship.

Dr. David Starr Jordan, whose death came on September 19, 1931, internationally known for his researches in systematic ichthyology and for other contributions to science, was appointed honorary associate in zoology on January 13, 1921, holding this title with the Smithsonian Institution from that date until his death. In this honorary capacity his interest in our organization was constant and constructive, particularly in connection with our work and collections in ichthyology.

Dr. Charles Dwight Marsh, honorary custodian of fresh-water copepods, died on April 23, 1932, at the age of 77 years. Doctor Marsh was born in Hadley, Mass., on December 20, 1855. He was graduated from Amherst College in 1877, and received his doctorate from the University of Chicago in 1904. In 1927 Amherst conferred upon him the honorary degree of doctor of science. Prior to his entering the Government service, Doctor Marsh was professor of biology at Ripon College, Ripon, Wis., where he served also at various times as dean of the college and as president. While at Ripon he became interested in the study of the plankton of fresh-water lakes, specializing on copepods, on which there is to his credit a bibliography comprising approximately 35 titles. In 1905 he came to the United States Bureau of Plant Industry as physiologist in charge of the investigation of poisonous plants, transferring in 1915 to the Bureau of Animal Industry to continue this work.

Doctor Marsh's interest in the study of fresh-water copepods continued, and during his many years' connection with the Department of Agriculture he always found time to report on collections of fresh-water copepods intrusted to him by the Museum. On his retirement from that department in August, 1930, he came to the division of marine invertebrates to continue research on copepods as a volunteer worker. In recognition of his many services to the Institution he was appointed, on July 10, 1931, honorary custodian of the fresh-water copepod collections, continuing in this work until his death. In a quiet way Doctor Marsh accomplished an extraordinary

amount of work, and he is greatly missed by those in the division of marine invertebrates and by other workers in the Museum.

Dr. Charles Wallace Richmond, associate curator of birds, died on May 19, 1932, at the Georgetown Hospital. Doctor Richmond was born in Kenosha, Wis., December 31, 1868, where he received his elementary education. He came to Washington in 1881 as a page in the House of Representatives. In 1888 he joined the United States Geological Survey for field explorations in Montana, and, on returning from this employment, became ornithological clerk in the division of economic ornithology and mammalogy in the United States Department of Agriculture. In 1892 and 1893 he was in Nicaragua making natural-history collections. After returning to Washington he entered the service of the National Museum on July 1, 1893, in the minor capacity of watchman. In October, 1893, he was made aid in the section of birds, and in July, 1894, became assistant. In November, 1895, he was appointed assistant curator of birds, and on September 1, 1918, became associate curator, which position he held until his death, except for the period of July 1 to September 16, 1929, when he held the title of curator, which he voluntarily relinquished for his former status of associate curator. In 1897 he was graduated by Georgetown University with the degree of doctor of medicine, and in 1900 was a member of the United States National Museum Expedition to Puerto Rico.

During the 38 years that Doctor Richmond was affiliated with the Museum he was a steady contributor to its publications, dealing constantly with problems of ornithology and nomenclature in which he was a recognized authority. He was consulted constantly by fellow workers in this field who relied upon his balanced judgment in all matters of involved and difficult decision. His fund of knowledge in ornithology was broad and his memory exact so that he has stood for many years as one of the leading figures in that science. His many friends miss his ready wit and pleasant counsel. Though a genial companion, he was by nature retiring in disposition and looked always to the interests of the Museum, and of science in general, without reference to his own personal advancement.

DETAILED REPORTS ON THE COLLECTIONS

REPORT ON THE DEPARTMENT OF ANTHROPOLOGY

By WALTER HOUGH, *Head Curator*

INTRODUCTION

The expanded program of exploration in the past few years has increased the accession of important material coming to the department of anthropology. The receipt of more than 5,000 specimens during the period of the present report, though only one-third of the number obtained last year, still marks an exceptional year in the important material included. Exploration by Dr. Aleš Hrdlička on Kodiak Island was productive of data on human migrations and brought a considerable body of material. H. W. Krieger's work in Cuba also was noteworthy in results. J. Townsend Russell pursued archeological work in France under a cooperative arrangement between the Smithsonian Institution and the University of Toulouse. James A. Ford, who remained through the winter at Point Barrow, Alaska, worked in the field throughout the summer and continued the investigations of H. B. Collins, jr., on St. Lawrence Island. Frank M. Setzler pursued exploratory work in caves in the Big Bend of Texas with notable success. Neil M. Judd explored cavern deposits in the difficult region of the Natanes Mountains in Arizona for relics of the southern Basket Makers.

ACCESSIONS FOR THE YEAR

Accessions totaled 149, or 3 more than received in the previous year, while the specimens numbered 5,413.

The division of ethnology received 60 accessions, comprising 931 specimens from various parts of the world, mostly as a result of field work by Smithsonian travelers. Notable among them is the contribution by Mrs. Charles D. Walcott of several antique poi bowls, cut from mottled wood, from Hawaii, desiderata in the Museum for many years. A large Hawaiian kava bowl was given by Miss Ella Loraine Dorsey; a collection of ethnological materials consisting of textiles, baskets, blowgun, torches, and fetishes, with copious data, from Quibdo, Colombia, was presented by W. A. Archer. Choice specimens numbering 326 from the southern Philippines were lent by the Misses Metcalf, obtained by them during a residence of many years in this region. Miss Ellen I. Burk continued to send speci-

mens from the Belgian Congo. From Nigeria and the Gold Coast C. C. Roberts sent additions of pottery, textiles, wood, brass castings, and other specimens, adding appreciably to his former important gifts. M. W. Stirling contributed a large collection of costumes in appliquéd colored cloth, cacique staffs, and hunting and fishing equipment from the Panama Indians. The Seminole Indians of Florida were represented by a collection of 25 specimens purchased from Miss Frances Densmore, consisting of picturesque costumes, jewelry, and musical instruments.

Sixty-nine new accessions, totaling 4,066 specimens, were recorded in the division of archeology during the year. To these should be added 2,474 specimens transferred from the division of ethnology and 172 objects not previously recorded, making a total of 6,912 for this division. For the preceding 12 months the totals were 57 accessions and 1,750 specimens. Of the material received in 1931-32, 2,250 specimens recorded under 58 separate accessions relate to the prehistory of the Western Hemisphere, while 1,816 specimens, under 11 accessions, pertain to that of the Old World.

The following important additions were included: A plaster cast of the famous bison, carved in clay by Upper Paleolithic sculptors, from the cave of Tuc d'Audoubert, Ariège, France, presented by the Old World Archeology fund administered by the Smithsonian Institution through arrangements made by J. Townsend Russell; 465 stone artifacts of Aurignacian Age from three sites in the French Pyrenees, collected by Mr. Russell as field director of the Franco-American Union for Prehistoric Research in France and received as a gift from the Old World Archeology fund; 495 earthenware vessels and stone and bone implements, collected by Dr. Frank H. H. Roberts, jr., for the Bureau of American Ethnology during the summer of 1930 from a Pueblo III ruin on the Zuni Indian Reservation, N. Mex., and transferred by the bureau to the National Museum; 479 flint implements from Aurignacian, Upper Paleolithic, Mesolithic, and Bronze Age horizons in the cave of Mugharet-el-Wad, near Athlit, Palestine, presented by the American School of Prehistoric Research in Europe through Dr. George Grant MacCurdy, director; 770 artifacts collected at various prehistoric sites in Europe and North Africa by J. Townsend Russell and by him presented to the national collections; 69 specimens, chiefly examples of basketry and textiles, from an as yet unidentified cave-dwelling people of the Big Bend section of Texas, collected for the Bureau of American Ethnology by Frank M. Setzler and received as a transfer from the bureau; an Indian bow, probably of Siouan origin, found in the mud about a spring near Luray, Va., and purchased from the finder; 182 stone, bone, and wooden artifacts collected for the Smithsonian Insti-

tution, chiefly on Kodiak Island, Alaska, by Dr. Aleš Hrdlička and received from the Institution as a deposit.

The division of physical anthropology received 23 accessions, totaling 381 specimens. A large collection again came from Alaska, the greater part from the regions about Bristol Bay and from Kodiak Island. Most of this was secured by Doctor Hrdlička and consisted of fairly well dated, complete skeletons. In addition, five small lots of material from Kodiak Island were received from the following individuals: Mrs. Laura Jones, James Corbett, Henry B. Looff, Ray Woods, and B. R. Hart. Further skeletal material from other parts of Alaska was received from the Alaska Agricultural College and School of Mines. A valuable collection of 11 specimens was obtained by Dr. William F. Foshag, of the Museum staff, from a cave in San Luis Potosi, Mexico. Through exchanges, the division received three fine skulls of aboriginal Australians and 14 facial casts of Kalmuks and Carpatho-Ruthenians. A rare pathological skull of an Indian, from Tennessee, was obtained through purchase.

INSTALLATION AND PRESERVATION OF COLLECTIONS

Two new major exhibits were installed in the hall of American archeology: (1) An Alaskan series, showing sequential changes in the form and ornamentation of ivory carvings, and (2) a number of earthenware vessels from three Pueblo ruins in Arizona, whose building dates, A. D. 1204 to 1375, were determined as a result of excavations by the Third Beam Expedition of the National Geographic Society. It was this particular investigation in 1929 that enabled Dr. A. E. Douglass to close the gap in his tree-ring chronology and thus ascertain the age of the famed Pueblo Bonito, in New Mexico, and some 60 later ruins heretofore classed merely as "prehistoric."¹

The new Alaskan exhibit includes material collected by various Smithsonian expeditions, with installation based on the findings of Henry B. Collins, jr., assistant curator of ethnology, whose investigations on St. Lawrence Island first supplied positive evidence of the chronological order in which Eskimo art evolved. At five old village sites near Gambell, Mr. Collins found three distinct stages of cultural development, from an early phase of the Old Bering Sea culture, with its mastery of line and form, to the latest phase of the Punuk, which immediately preceded the comparatively simple art of the modern Eskimo. This chronological information is of vast importance to a full understanding of the Eskimo, and will be welcomed by all students of the American Indian.

¹ These important researches are described in *Recently Dated Pueblo Ruins in Arizona*, by Emil W. Haury and Lyndon L. Hargrave, Smithsonian Misc. Coll., vol. 82, no. 11, 1931.

Two other exhibits, concerned with the prehistory of Indiana and Iowa, were reinstalled and more adequately labeled after the collections from these States had been reexamined and reclassified.

The specimens comprising the synoptic series of aboriginal smoking pipes, gorgets, tubes, and banner stones, occupying five table cases, were regrouped by States and arranged according to culture areas. These changes not only improve the general appearance of the exhibits but also emphasize the marked homogeneity of these highly specialized artifacts when found in districts obviously inhabited by the same or related tribes.

In the hall of Old World archeology several objects from prehistoric village sites in Asia Minor, purchased by the Smithsonian Institution with the income from the Bruce Hughes fund, were assembled in improved arrangement. An inventory of the collections in Old World archeology was made during the winter by J. Townsend Russell, collaborator, and his assistant, S. E. Perkins. As far as possible all unnumbered specimens have been identified and marked, catalogue cards prepared for accessions not previously recorded, and items pertaining more directly to religions transferred to the division of ethnology. The progress made during the year in work on these collections is due to the energy of Mr. Russell and to financial assistance from the Old World Archeology fund, presented to the Smithsonian Institution by private subscription for this purpose. This fund made possible the purchase of reproductions long needed for our exhibition halls; financed the investigations of the Franco-American Union for Prehistoric Research in France, directed by Mr. Russell under the joint auspices of the Smithsonian Institution and the University of Toulouse; and provided for the employment of S. E. Perkins as temporary assistant.

The collection of ceramics was kept in good order, and several new installations and rearrangements were made by R. A. Allen.

Construction of galleries in the northwest basement allowed the removal of the art textile collection to the northwest hall, second floor. This shift was made by Mr. Allen, whose excellent care of the collection for many years is to be commended.

INVESTIGATION AND RESEARCH

Henry B. Collins, jr., continued investigations during the year on Eskimo archeology, in the Smithsonian program of research looking toward the recovery of data on the chronological sequence of certain early phases of Eskimo culture in Alaska. Mr. Collins also devoted some time to research on southeastern archeology, particularly on material excavated from a prehistoric Indian village site in

Yazoo County, Miss., to obtain evidence regarding tribal sequence and historical relationships in prehistoric Mississippi.

Herbert W. Krieger, through financial assistance provided by Dr. W. L. Abbott, investigated mounds, earthworks, and kitchen middens in central and western Cuba, where he was occupied from January to May in excavating aboriginal village sites belonging to various tribal cultures. Increasing information on the phases of prehistoric occupation of the Greater Antilles has become known through five seasons of active field work of Smithsonian expeditions financed by Doctor Abbott in the Dominican Republic, Haiti, and Cuba. The present season's work has confirmed what has been repeatedly affirmed by students of the subject—that Mayan influence did not reach western Cuba. The conclusion was also reached that pre-Arawak cultures of the Ciboney type were much more extensive than had previously been known. Art-design areas of North America and of Oceania, combined with certain problems connected with the distribution of aboriginal design (for example, the quilled and painted designs on the George Catlin Indian costumes), were a minor topic of research by Mr. Krieger.

Doctor Hough completed a study of the rationale of seating furniture as related to the habits of different races and began a study of the art of the domestication of animals, especially as related to the psychology of the animals themselves and the reaction upon man.

As time could be spared from divisional activities, the curator of archeology, Neil M. Judd, continued the preparation of his report on the Pueblo Bonito explorations (1921-1927) of the National Geographic Society. In addition to preliminary studies on his 1931 collections from Texas, Assistant Curator Setzler completed for the Department of Anthropology of the University of Chicago a pictorial album of archeological material from Wisconsin and made progress on an article describing the prehistoric cultures of the Upper Mississippi Valley. In collaboration with Dr. William Blum, of the United States Bureau of Standards, Mr. Setzler continued experiments with the caustic cathode treatment of the malignant patina, which threatens with disintegration many of our bronze specimens from Egypt and other Mediterranean countries.

The curator of physical anthropology, Doctor Hrdlicka, measured the material to appear in the fifth part of his catalogue of crania. Measurements were also made on new Eskimo crania in anticipation of a revised edition of that part of the catalogue. Research was carried out on the humeri of various races, part result of which is embodied in a paper entitled "The Principal Dimensions, Absolute and Relative, in the White Race," now in course of publication. Much time was consumed in working up data for a paper entitled

“The Pueblos.” Assistant Curator T. D. Stewart studied the entire collection of Eskimo skeletons to obtain the incidence of a vertebral anomaly. The same material is now serving for a study of arthritis. Besides this research on the division collections, Doctor Stewart continued work on the myology of the anthropoid apes and the hair directions in primates, and made a study of the primate collection at Johns Hopkins University, Baltimore, Md.

Miss Frederica de Laguna, archeologist at the University of Pennsylvania Museum, spent a week studying the earlier Alaskan collections and those recently obtained by Doctor Hrdlicka and Mr. Collins. H. W. Schwartz studied the collection of music for the Museum of Science and Industry, Chicago, with a view to making copies of several rare instruments. Foreign students were given information pertaining to Indian collections when required. Dr. B. Frh. von Richthoven, of Berlin, was especially interested in the early cultures of Alaska as illustrated in the several collections of Krieger and Hrdlicka. Illustrations and descriptions of potsherds were supplied for Doctor Richthoven and for several other European scholars interested in the study series. Photographs of boats of Asiatic peoples were furnished James Hornell, of England. Mrs. Josephine K. Powers spent three days at the division studying dolls and selecting those she wished to have photographed. P. H. Douglas received information from Doctor Hough relative to the history of beadwork. Doctor Hough, in an address before the National Warm Air Heating Association at their meeting in Washington in December, outlined the early history of heating. Dr. C. J. Connolly, of the Catholic University of America, continued his studies on the brain collection.

Sixty lots of specimens were received during the year for identification and report.

The Buffalo Museum of Science was aided in preparing the highly specialized exhibits planned by that museum concerned with rice culture and with barter and exchange. Data regarding the type specimens were prepared, and Doctor Hough during visits to Buffalo gave his critical opinion of the exhibit plans.

Early in November Neil M. Judd, curator of archeology, visited Charlottesville, Va., to examine with D. I. Bushnell, jr., the sites of Monasukapanough and other early Monacan towns indicated on Capt. John Smith’s 1624 map of the Chesapeake region, which sites Mr. Bushnell has had under investigation for the Bureau of American Ethnology. As the fiscal year ended the curator was sent to Jamestown, Va., at the request of the National Park Service, to confer with the park officials in the excavation and restoration of newly discovered kilns, which are thought to have been used by the European glassmakers brought to the colony in 1609 or 1621.

On behalf of the Museum and as guest of Burnham S. Colburn, of Biltmore, N. C., Assistant Curator Setzler examined a number of private archeological collections and several old Cherokee village sites in North Carolina, Tennessee, and Georgia. Later in the winter he was sent to Glenville, W. Va., to test a near-by cave thought to evidence occupancy by ancient Indians. En route to his explorations in Texas, Mr. Setzler stopped at Cumberland Island, Ga., at the invitation of T. M. Carnegie, to supervise removal of an Indian dugout canoe, buried in a tidewater channel. Before returning to Washington in June, 1932, Mr. Setzler visited the museum of the West Texas Historical and Scientific Society, at Alpine; the Witte Memorial Museum, at San Antonio; and the University of Texas Museum, at Austin.

To study improved methods of preservation for certain types of archeological specimens, W. H. Egberts, chief preparator for the department of anthropology, visited the Peabody Museum of Harvard University, the Guernsey-Pitman Studio, Cambridge, Mass., and the Metropolitan Museum of Art, New York City. At each institution many new and valuable facts were placed at his disposal for use in the department.

DISTRIBUTION AND EXCHANGE OF SPECIMENS

In the division of ethnology, one collection totaling 125 specimens was withdrawn; two exchanges made included 3 specimens; seven gifts totaled 192 specimens; 24 specimens were condemned as worthless; transfers to other divisions accounted for the distribution of 2,481 specimens; 174 specimens were transferred from the division of archeology; 20 Chinese festival kites were loaned to the division of engineering; and 7 artificially deformed or decorated heads were loaned the division of physical anthropology.

During the year, 20 lots (797 specimens) of archeological material were sent out in exchange or as gifts to educational institutions, as follows: To Dr. Adolf Dieckmeyer, of Berlin, Germany, 40 prehistoric stone artifacts from the Eastern United States in exchange for ethnological material of the American Indians; to the Field Museum of Natural History, Chicago, Ill., 136 ivory and bone objects and potsherds from Alaska, sent in exchange for ethnological specimens from Melanesia; to Judge O. E. Bland, of Washington, D. C., 4 casts of pottery vessels from near Worthington, Ind., in exchange for the courtesy of loaning the important originals; to J. G. Braecklein, of Kansas City, Kans., a cast of a stone pendant from Tampa, Fla., in exchange for the loan of the original; to C. S. Hubbell, of Seattle, Wash., a cast of a stone lamp from Alaska, in exchange for the privilege of reproducing the original for our collections.

Artifacts—chiefly restored earthenware vessels—from prehistoric Elden Pueblo, near Flagstaff, Ariz., were sent as gifts to educational institutions, as follows: To the Arizona State Museum, University of Arizona, Tucson, 39 specimens; to the University of Utah Museum, Salt Lake City, 5 specimens; to the Los Angeles Museum of History, Science and Art, Los Angeles, Calif., 5 specimens; to Gila Pueblo, Globe, Ariz., 30 specimens; to the Peabody Museum, Harvard University, Cambridge, Mass., 35 specimens; to the Laboratory of Anthropology, Santa Fe, N. Mex., one lot of potsherds; and to the Department of Anthropology of the University of Chicago, one lot of potsherds. In addition, 212 stone implements from the Eastern United States were presented to Elmira College, Elmira, N. Y.; 1 lot of human-jaw fragments from Virginia and Maryland was given to the Columbia Dental School, New York City; 205 stone implements, mostly from Virginia and Georgia, were presented to the Washington Field Museum, Washington, N. C.; 9 stone implements from prehistoric sites in Europe were presented to the Madeira School, Fairfax County, Va.; 64 pottery vessels and stone artifacts were presented to the McDonogh School, McDonogh, Md., as a replacement for an earlier donation destroyed by fire; 4 stone implements and pottery vessels from the United States were presented to the St. Ignatius School, Hicksville, Long Island, N. Y.; 4 stone implements were forwarded as gifts to the Ellis Museum, Maquoketa, Iowa. Twenty-eight lots of sherds were presented for study purposes to research institutions, as follows: 3 lots to Gila Pueblo, Globe, Ariz.; 4 lots to the Department of Anthropology of the University of Chicago; 2 lots to the Laboratory of Anthropology, Santa Fe, N. Mex.; 4 lots to the Arizona State Museum, Tucson; 3 lots to the Peabody Museum, Harvard University, Cambridge, Mass.; 2 lots to the University Museums, Ann Arbor, Mich.; 3 lots to the Museum of Northern Arizona, at Flagstaff; 1 lot to the Los Angeles Museum of History, Science and Art; 1 lot to the Southwest Museum, Los Angeles, Calif.; 2 lots to the University of Utah Museum, Salt Lake City; 2 lots to the Charleston Museum, Charleston, S. C.; and 1 lot to the Institute of Jamaica, Kingston, Jamaica.

One specimen, a model of Egyptian funerary paraphernalia, a loan, was withdrawn by the lender.

The following transfers have been made within the department: From the division of ethnology to the division of archeology, 2,468 pre-Russian objects from Alaska and 6 earthenware fragments from ancient Chinese tombs; from the division of archeology to the division of ethnology, the following material: 4 historic Chinese vases; 170 religious objects, representing various accessions; and miscellaneous lots of uncatalogued material. A plaster bust was transferred to the National Gallery of Art.

From the division of physical anthropology two lots of material were sent out in exchange: Twelve facial casts of American Indians to Masaryk University, Brno, Czechoslovakia; and three skulls to the South Australian Museum.

NUMBER OF SPECIMENS UNDER DEPARTMENT

The department of anthropology received 149 accessions, comprising 5,413 specimens. Of these, 6 accessions totaling 334 specimens were loans, leaving a permanent addition of 5,079 specimens. The incoming material was distributed as follows: Ethnology, 60 accessions with 931 specimens; archeology, 69 accessions totaling 4,066 specimens; physical anthropology, 23 accessions and 381 specimens; musical instruments, 2 accessions with 2 specimens; ceramics, 5 accessions with 12 specimens; and art textiles, 6 accessions with 21 specimens.

On June 30, 1932, the total number of specimens in the department was 667,812, as follows:

Ethnology	186, 443
Archeology	439, 262
Physical anthropology	32, 839
Musical instruments	2, 072
Ceramics	5, 800
Art textiles	1, 387
Anthropology (not assigned)	9
Total	667, 812

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REPORT ON THE DEPARTMENT OF BIOLOGY

By LEONHARD STEJNEGER, *Head Curator*

INTRODUCTION

After the phenomenal increase in the collections of this department last year it was natural that the material received during the present year should show a pronounced decrease. No large private collections were incorporated during the year, nor were any major exploring expeditions sending in material from the field.

Field work by the staff has been limited. Gerrit S. Miller, jr., curator of mammals, during March and April visited Puerto Rico; Dr. J. M. Aldrich, curator of insects, spent July collecting in the White Mountains of New Hampshire and in the Gaspé Peninsula of Quebec, Canada. Dr. Waldo L. Schmitt, curator of marine invertebrates, made field studies and collections of crustaceans and other marine forms during a few weeks' sojourn at the Carnegie Marine Biological Laboratory at Tortugas, Fla. Dr. Paul Bartsch, curator of mollusks, spent several weeks along the Florida Keys investigating his *Cerion* breeding experiments under the auspices of the Carnegie Institution. E. D. Reid, aid in the division of fishes, accompanied by J. S. Warmbath and W. M. Perrygo, taxidermists, early in August, 1931, went to Bayhead, N. J., to care for a specimen of a 1,200-pound ocean sunfish with a view to mounting it for exhibition.

It is with the greatest regret that I place on record the death of Dr. Charles W. Richmond, associate curator of birds, on May 19, 1932. His passing is an irreparable loss not only to the division of birds but to the whole department of biology. In addition to his prominence as an ornithologist of international repute, he was an authority on zoological, biographical, and nomenclatorial matters in general. His kindly and ready assistance endeared him to his many colleagues.

ACCESSIONS FOR THE YEAR

Accessions for the year amounted to 999, with a total of 121,701 specimens, considerably less than for the previous year, but with no decrease in the scientific value of the collections received. Several divisions report material of exceptional merit either coming from regions previously poorly represented or containing specimens of forms new to science or hitherto not possessed by the Museum. Col-

lections from China, which for some years have been a feature of our accessions, have fallen off temporarily; other sections, such as South Africa, South America, and Australia, were among the chief contributors during the past year.

One of the most interesting general collections, containing novelties in several classes of animals, was made by Mrs. L. O. Sordahl, while at the solar observatory maintained by the Smithsonian Institution since 1929 on Mount Brukkaros, Southwest Africa. The National Geographic Society generously made additions to the material previously presented from the Brazilian-Venezuelan border expedition under the leadership of Ernest G. Holt. Dr. Hugh M. Smith has continued sending valuable collections from Siam, and various Government agencies, scientific institutions, friends, and correspondents of the Museum have contributed outstanding material.

Mammals.—The acquisition of a mounted skeleton of a Pacific pike whale (*Balaenoptera acutorostrata*) from Glacier Island, Alaska, is one of importance. The collection of 49 mammals brought back by Mrs. L. O. Sordahl from Southwest Africa included representatives of five genera new to the Museum. Mammals collected by Dr. Hugh M. Smith in Siam for the Museum numbered 87. Purchases include 77 small mammals from Costa Rica procured from C. F. Underwood; 13 mammals from Ceylon, from W. Schofield; and 22 mammals from French Indo-China, from M. Poilane. W. G. Sheldon and Richard Borden presented to the Museum 146 mammals collected in British Columbia. Among the 66 specimens received from the National Zoological Park the following deserve special mention: A young gorilla, a young chimpanzee, two adult white-cheeked gibbons, a Chinese raccoon dog, two pronghorned antelopes, a new-born pygmy hippopotamus, and a musk-ox.

Birds.—Additions in the division of birds have been most important, as they have included 23 genera and 340 forms new to the Museum. The most noteworthy accessions were as follows: From the National Geographic Society, by gift, 1,380 bird skins and 33 anatomical specimens; from the late Marcus Daly, by gift, 178 African birds, representing 120 forms new to the Museum; from W. F. H. Rosenberg, by purchase, 199 bird skins, including a collection of rarities from Prof. M. I. Menzbier's central Asiatic material, among which were two specimens of *Koslowia*, a genus new to the Museum; from the Museum of Comparative Zoölogy, 54 birds of forms new to the Museum; from the American Museum of Natural History, by exchange, 150 skins and 1 alcoholic, including one genus, *Pseudochelidon*, and 49 forms new to the Museum; from Dr. H. M. Smith, by gift, a collection of 1,013 skins and 12 skeletons of Siamese birds, including two genera, *Aceros* and *Cerasophila*, not previously represented in the Museum; from the

Zoologische Museum, Berlin, Germany, by exchange, 67 birds chiefly from New Guinea and including 14 genera and 57 forms new to the Museum, among them being *Paramythia* and such other Papuan genera as *Pristorhamphus*, *Neneba*, *Timeliopsis*, *Pycno-pygius*, *Mellopitta*, *Megalestes*, *Clytomyias*, *Oreocharis*, and *Amalochicha*. In exchange with Charles M. Inglis, of Darjeeling, India, the collection acquired three birds of two genera, *Chalcophasis* and *Chaetornis*, likewise new to the Museum; and with Prof. K. Dernedde, 21 specimens of 15 forms of hummingbirds hitherto unrepresented in the collection, as were two birds obtained by exchange from the Royal Scottish Museum representing *Rowettia* and *Nesospiza*, genera only occurring in the Tristan da Cunha Islands. Also new to the Museum collection were six rare African birds donated by R. E. Moreau; and 24 African birds, including the genus *Artisornis*, supplied in exchange by the Academy of Natural Sciences of Philadelphia. Mrs. L. O. Sordahl's collection of 48 skins, 6 nests, and 3 eggs from Southwest Africa included 9 forms of which the Museum did not previously possess representatives. A noteworthy addition to the anatomical material was an alcoholic specimen of the rare Tristan rail (*Atlantisia rogersi*) presented by Jack Gordon.

Reptiles and batrachians.—The most important accession in the division of reptiles and batrachians was the small but excellent collection made by Mrs. L. O. Sordahl in Southwest Africa, a region from which the Museum had practically no material heretofore. More than 1,000 reptiles and amphibians, mostly from Kansas, Missouri, and Tennessee, were obtained from Dr. C. E. Burt. M. K. Brady presented nearly 400 specimens from Florida. A small Australian collection was obtained from J. Baldwin and another collection from Indo-China from M. Poilane, both of which contained well-preserved material from interesting localities. Dr. H. M. Smith sent from Siam a small shipment of considerable interest.

Fishes.—Through the United States Bureau of Fisheries, 404 specimens of fishes from the fresh waters of Costa Rica, collected by A. Alfaro, were received by transfer; also 156 specimens collected in Maine, Labrador, and elsewhere by Dr. W. C. Kendall, and 24 specimens from South Dakota and Georgia, including the type and cotypes of *Hybognathus churchilli* Hildebrand. The Carnegie Institution of Washington donated 182 specimens of fishes from Tortugas, Fla., collected by Dr. W. H. Longley in August, 1931. A specimen of ocean sunfish (*Mola mola*) weighing about 1,200 pounds, captured in the nets of the Bayhead Fisheries (Inc.), was presented by the Edward C. Worden Laboratory, Millburn, N. J. E. D. Reid and W. L. Brown, of the National Museum, with William

Pike, collected 532 specimens of fishes from Cobb Island, Md., in the Potomac River. From the Museo Civico di Storia Naturale, Milan, were obtained, through Prof. Louisa Gianferrari, 18 specimens of Mediterranean fishes, including cotypes of *Leucaspis prosperei* Gianferrari from the island of Rhodes, and others from deep water of the Straits of Messina.

Insects.—In the division of insects the largest number of specimens, 16,370, among which there were 11,530 Diptera, were transferred by the United States Bureau of Entomology out of material sent for identification by the members of its staff of specialists. Through the same source 547 flies, collected in China by H. A. Jaynes, were also obtained. R. C. Shannon (with the Rockefeller Foundation) donated 12,000 insects from South America and 2,000 from Europe. From the Museum of Comparative Zoölogy 1,750 Orthoptera were obtained. Several collections of Lepidoptera were received, including 780 specimens from Dr. W. Schaus; 1,518 from Capt. T. W. Richards, United States Naval Hospital; 1,032 exotic Lepidoptera from O. Querci, of Philadelphia, Pa.; and 1,000 butterflies and moths from Commander C. M. Dammers, United States Navy, of Riverside, Calif. Dr. F. R. Ohaus, of Mainz, Germany, contributed 291 beetles. Mrs. L. O. Sordahl presented 561 insects collected by her in Southwest Africa. Collections of miscellaneous insects were received from several collectors, including 1,687 from D. S. Bullock, Angol, Chile; 1,114 from A. Guevara, of Bogotá; 735 from W. A. Archer, Colombia; 200 from T. Vaughan-Sherrin, Australia; and 1,123 from F. W. Morand, McKinley Park, Alaska.

Marine invertebrates.—The number of specimens received in the division of marine invertebrates during the year was 11,225, including the following accessions of particular interest: From Capt. Robert A. Bartlett, of New York City, 364 specimens from the eastern coast of Greenland; British Museum (Natural History), London, 240 specimens of recent Bryozoa; Dr. F. Canu, of Versailles, France, 100 specimens of recent Bryozoa from the southeastern coast of France; E. P. Chace, of San Pedro, Calif., 111 specimens of Crustacea from various localities in California; Miss Doris M. Cochran, of the division of reptiles and batrachians, 393 specimens from various localities in Maryland; Fan Memorial Institute of Biology, Peiping, China, 51 specimens from China; Dr. Kanzaemon Kikuchi, Toyama, Japan, 25 specimens of Crustacea from Japan; Dr. A. S. Pearse, of Duke University, 638 specimens from Tortugas, Florida, and the Marquesas Islands; Dr. Waldo L. Schmitt, curator, 4,262 specimens from Tortugas, taken under the auspices of the Carnegie Institution of Washington; Clarence R. Shoemaker, assistant curator, 750 specimens from Maryland and Virginia; Len R. Thomas, of

Sydney, Australia, 500 specimens of recent Bryozoa from Australia; United States Bureau of Fisheries, 490 specimens of miscellaneous marine invertebrates. Several smaller accessions, worthy of special mention because they contain type specimens deposited in the national collections, are as follows: From Ernest Danglade, of Vevay, Ind., type of a polyclad worm described by Dr. Arturo Palombi as *Stylochus inimicus*; Dr. N. Gist Gee, of the University of California, cotypes of three new fresh-water sponges described by him as *Trochospongilla latouchiana* var. *pasicensis*, *Spongilla luzonensis*, and *S. tinei*; Dr. Libbie H. Hyman, of the University of Chicago, paratype of *Hydra utahensis* and male and female types of *Palmatohydra pseudoligactis*; Museum Paulista, São Paulo, Brazil, type of an anemone described by Dr. O. Carlgren as *Ceriantheomorphe brasiliensis*; Dr. A. S. Pearse, of Duke University, types of two new isopods, *Bopyro choprae* and *Hemiarthrus schmitti*, and three new protozoans, *Trypanosoma ophiocephali*, *T. trichogasterae*, and *Gregarina ucae*, all described by him; and Zoologisch Museum, Amsterdam, Netherlands, 30 specimens (topotypes) of Bryozoa of the *Siboga* expedition.

Mollusks.—Among the 17,940 specimens received in the division of mollusks there are several important accessions, including the following: From Dr. Hugh M. Smith, of Bangkok, Siam, 1,500 specimens of land, fresh-water, and marine mollusks from Siam, undoubtedly the most outstanding contribution during the year; Pedro de Mesa, of Calapan, Mindoro, Philippine Islands, 675 specimens of land mollusks from Mindoro Province, containing many new species, which have formed the basis of several papers by the curator; a collection of fresh-water mollusks purchased through the Frances Lea Chamberlain fund from Mrs. L. Sinitsin; Dr. H. B. Baker, of the University of Pennsylvania, 344 specimens of land and fresh-water mollusks from various parts of the United States, containing paratypes of species described by him; Museum of Zoology, University of Michigan, 5,170 specimens of fresh-water mollusks; United States Bureau of Fisheries, a barrel of pearl oysters, representing the new species *Pinctada galtoffi* Bartsch; Museum of Comparative Zoölogy, paratypes of two species of land shells from Beata Island, West Indies; Dr. Waldo L. Schmitt, a collection of marine mollusks from the Tortugas, including the type of *Aurinia schmitti*; Prof. T. D. A. Cockerell, of the University of Colorado, 16 specimens of land, fresh-water, and marine shells from New Caledonia, including one paratype; Ralph W. Jackson, of Cambridge, Md., 6 specimens of *Diplodon jacksoni* Marshall; Col. W. H. Turton, of Bristol, England, 180 specimens of marine shells, mostly paratypes, from South Africa; Lieut. Commander S. S. Cook, United States Navy, of Port-au-

Prince, Haiti, 22 specimens of land shells from Morne La Selle, Haiti; Dr. James Zetek, of Balboa, Canal Zone, 4 paratypes of *Polymesoda zeteki* Pilsbry from Panama; George L. Harrington, of Buenos Aires, Argentina, 283 specimens of mollusks from Peru.

Corals.—About 66 specimens of corals were accessioned, including 4 specimens received from Dr. T. Wayland Vaughan, of La Jolla, Calif., genotypes not represented in our collection previously.

Helminths.—The total number of helminths accessioned is 978.

Echinoderms.—The most important accession was the collection of crinoids assembled by the Australasian Antarctic Expedition, 1911-1914, under the leadership of Sir Douglas Mawson. Virtually all this large collection was presented to the Museum by Sir Douglas, a small representation of each species, including the type specimen of *Florometra mawsoni*, being sent to the Australian Museum at Sydney. Thanks to this generosity, the Museum now possesses the largest and most complete collection of Antarctic crinoids to be found anywhere.

Plants.—In the herbarium the number of accessions for the past fiscal year is 272 lots, comprising 33,787 specimens, the material received being of unusually high quality. The more important accessions are as follows: 7,131 specimens transferred by the United States Department of Agriculture, chiefly from eastern China and the Western United States, through the Bureau of Plant Industry; 3,293 specimens and plant photographs received from the Field Museum of Natural History, Chicago, through purchase and exchange, 2,845 being photographs of type specimens of American plants in European herbaria; 3,262 specimens received from the Arnold Arboretum of Harvard University in continuation of exchanges; 515 specimens from the montaña of eastern Peru, received as a gift from G. Klug, of Iquitos, Peru; 445 specimens collected by Holt and Blake along the Brazil-Venezuela border, presented by the National Geographic Society; 565 specimens collected by C. L. Lundell in the little-explored region of Campeche; 747 specimens collected by Dr. E. L. Ekman in the Dominican Republic, through Prof. H. Samuelsson, of Stockholm, Sweden; 880 specimens from Brazil, received from the Museu Nacional, Rio de Janeiro, in continuation of exchanges; 560 specimens of Paraguay plants, purchased from Pedro Jorgensen, of Villarrica, Paraguay; 538 specimens, chiefly from British Honduras and Guatemala, received from the University of Michigan in exchange; 648 specimens from little-explored parts of Colombia, presented by the collector, W. A. Archer, of Mesilla Park, N. Mex.; 730 specimens from Nicaragua, received from the Instituto Pedagogico de Varones, Managua, Nicaragua, as a gift; 603 specimens, mainly from Brazil, received from the Naturhis-

toriska Riksmuseet, Stockholm, in continuation of exchanges; 455 specimens from China, received from the Academia Sinica, Nanking, also in exchange; 1,105 specimens, collected in Texas by Prof. S. B. Wolff, presented by the Texas Agricultural Experiment Station; 883 specimens from Arizona, received from Dr. John W. Gillespie, of Tempe, Ariz., chiefly as a gift; 662 specimens from Arkansas, presented by the collector, Prof. Delzie Demaree, of Stanford University; 455 specimens, mainly from China, received from Naturhistorisches Museum, Vienna, Austria, in continuation of exchanges; and 507 specimens from tropical America and the Eastern United States, received from the New York Botanical Garden in continuation of exchanges.

INSTALLATION AND PRESERVATION OF COLLECTIONS

The most important move in the rearrangement of the biological collections during this fiscal year has been the completion of the steel galleries in the west and northwest ranges, ground floor of the Natural History Building, for the housing of the mammal collections. This arrangement, through which it was possible to utilize fully the height of these halls by means of a second floor, has made possible the installation of the study collections of mammals in the space adjacent to the offices of the division of mammals, where they will be more readily accessible for use. The entire collection housed in several hundred cases was in place and the ranges in question painted by the opening of the meeting of the American Society of Mammalogists, the first week in May. The cases were painted with a white enamel that can be cleaned as necessary. These collections can now be put in proper form.

The removal of the mammal collections from the second floor has opened for use two fine exhibition halls that have been closed to the public since the mammal collections were moved into them at the beginning of the World War. These two large and finely lighted halls add appreciably to our exhibition space and in addition allow the public access to two wings formerly closed.

A series of alcoves in both ranges is devoted to various exhibits of the domestic fowl, the domestic pigeon, albinisms and other abnormal variations, nests and eggs, the destructive lot of insects, and the coral collection. In addition, synoptic series are shown of such invertebrates as insects, crustaceans, mollusks, sponges, and echinoderms. The rearranging of these exhibits was made by the chief taxidermist, W. L. Brown, and his assistant, W. M. Perrygo, who through prolonged effort were able to complete them in time to be opened to the public at the beginning of the George Washington Bicentennial celebration on February 22.

Among additions to our exhibits may be mentioned a group of harnessed antelopes, mounted by the chief taxidermist and his assistants; a large mountain gorilla, collected and presented by Benjamin Burbridge, which gives excellent representation of this interesting species; a gibbon from Tenasserim, collected by Dr. W. L. Abbott; and a rhea and various smaller specimens, including several casts of reptiles.

During the year the taxidermists prepared for the division of mammals 25 skins for tanning, 107 made-up skins, and 27 bodies roughed out for skeletons. Fifty-seven large and medium-sized skins were tanned on outside contract. The osteological preparators cleaned 310 skulls, 111 skeletons, and 22 sets of leg bones. Through contract, 577 skulls and 153 skeletons were prepared.

The work of the preparators for the division of birds included skinning 105 birds, degreasing and remaking 150 skins, mounting 5 birds for the District of Columbia collection, cleaning 295 skeletons, skeletonizing 77 birds, and blowing 28 eggs. J. A. Mirguet's work on the skeleton collection is more than keeping pace with accessions, and he is making inroads into the accumulated work of previous years.

The study collection of fishes was carefully examined with special reference to the type specimens.

Noteworthy progress was made in curatorial work in the division of insects. Dr. J. M. Aldrich, the curator, was occupied with arrangement and expansion of the Diptera, principally in the muscoid groups. In the Coleoptera, H. S. Barber continued rearrangement and reorganization in the families assigned to him in connection with his identification work. Dr. A. G. Böving began the transfer of the coleopterous larvae from small racks with the specimens in small-size vials into groups of vials placed in large jars, which are kept filled with preserving fluid. While the new system is less convenient to the worker in referring to material, it is far safer from the viewpoint of keeping the specimens at all times immersed in the preserving fluid. About one-half of the entire collection has been transferred to new containers. Dr. M. W. Blackman rearranged the collections of Scolytidae. L. L. Buchanan made considerable progress rearranging many of the families of beetles in which he undertook identification work. All the Museum collection of Dytiscidae and Hydrophilidae, including about 50 Schmitt boxes, was transferred to standard Museum drawers, and the Hajoss collection of European weevils, including about 1,075 species, was incorporated in the collection. In the family Curculionidae, all accumulated material from the Brooklyn Museum collection, the private collections of Greene, Nicolay, Richardson, Robinson, Chittenden, and Bu-

chanan, was systematically distributed throughout the classified collection, so that the specimens are now readily available to students and workers. In the Cicindelidae, about 600 specimens identified and returned by Dr. Walther Horn were incorporated, and this family is now in satisfactory condition. Dr. E. A. Chapin continued the organization and arrangement of various groups in the family Scarabaeidae, particularly in the subfamilies Scarabaeinae, Geotrupinae, Melolonthinae, Dynastinae, and Cetoniinae. Similar work was carried on in some of the subfamilies of the Nitidulidae, and work on the Passalidae and Lucanidae was continued. W. S. Fisher made progress on a rearrangement of the Mexican, Central American, and South American Cerambycidae. He also completed arrangement of the North American species of the subfamily Prioninae. In Lepidoptera, Foster H. Benjamin, who has joined the staff in taxonomy of the Bureau of Entomology, incorporated the slides of genitalia of Macrolepidoptera from the Barnes collection into the general Museum collection, and rearranged the whole in the interests of ready accessibility. Further, he incorporated into the general collections about 3,000 specimens received with the Barnes collection but previously unworked. He consolidated all our North American specimens of the families Sphingidae, Saturniidae, Ceratocampidae, and Noctuidae, of the subfamily Heliothinae, and parts of subfamilies Agrotinae and Hadeninae in one series. August Busck continued the consolidation of the Barnes collection and other Museum material in the Microlepidoptera, and during the year treated parts of the families Aegeriidae, Pterophoridae, and Acrolophidae. Carl Heinrich incorporated in the collections a large series of specimens of moths and of genitalia slides representing species of the family Crambidae assembled by the late George G. Ainslie in connection with his taxonomic studies on this family. He also consolidated the Barnes collection and Museum material in the Crambidae and Olethreutidae. All specimens of immature stages of Lepidoptera have now been transferred to uniform standard containers. Dr. W. Schaus continued to expand and enlarge the collections of exotic Lepidoptera with the accretions of new material to the extent that available facilities permitted. C. T. Greene cared for the normal expansion of the collections of Diptera that fell within his interests. Dr. Alan Stone, recently added to the taxonomic staff of the Bureau of Entomology, went over the entire mosquito collection and spent much time in working over a large quantity of material left by the late Dr. Harrison G. Dyar. In addition, he checked the New World species of *Tabanus* in the collection. In the Hymenoptera, A. B. Gahan incorporated the chalcidoid collection from Vienna and added a lot of type material received from Harold Compere. R. A. Cush-

man rearranged certain small groups of Ichneumonidae. C. F. W. Muesebeck, recently added to the taxonomic staff of the Bureau of Entomology, rearranged in part the subfamilies Hecabolinae, Exothecinae, and Blacinae of the Braconidae. Miss Grace Sandhouse assembled all the material of the genus *Campsomeris* belonging to the group *plumipes* from the United States and the Greater Antilles, and determined and arranged this in accordance with the paper on the genus published by Prof. J. C. Bradley in 1928. She rearranged the North American Pseninae in accordance with a recent manuscript paper by J. R. Malloch on this subfamily. A. N. Caudell regrouped portions of the Orthoptera collection and newly arranged the specimens of exotic Corrodentia now in the Museum collections. Dr. H. E. Ewing transferred the Mallophaga collection to a larger cabinet, which has permitted its expansion and has made it much more accessible than before. Similarly, the Anoplura collection was transferred to a slide cabinet. Rearrangement of the collection of spiders was begun under Doctor Ewing's supervision, and additions have been made to the pinned collection. Work on the Hemiptera collections was continued at an active rate. H. G. Barber identified all material from the Nearctic region in the families Pentatomidae, Coreidae, Reduviidae, and Aradidae, and made considerable progress on arranging the neotropical Pentatomidae, Arididae, and Neididae. P. W. Oman arranged a number of genera of the family Cicadellidae as follows: North American *Empoasca*, part of the North American *Erythroneura*, all the *Agallia* from North and Central America and the West Indies, all the *Agalliopsis* from the same regions, and the North and Central American *Aceratagallia*. P. W. Mason reports that the aphid and aleyrodid collections are well organized and practically all in an up-to-date condition, and that the material currently received is added at once to the collections in these groups.

Dr. Waldo L. Schmitt, curator of marine invertebrates, reports that as a result of extra temporary help allotted to the division during part of the year the whole of the collection on the upper floor of the alcoholic storage room was gone over, alcohol replenished, corks and containers replaced when necessary, and bottles and shelves cleaned, so that the alcoholic study collection now is in better condition than for a number of years past. The large and valuable marine deposit collection has been undergoing a thorough overhauling, involving cleaning bottles and shelves, renewing labels and containers, and intercalating in the regular series the many hundreds of samples that have accumulated during the past decade.

Distribution of mounted phanerogamic material into the main herbarium of the division of plants has been continued, supplementing the several partial distributions (regional) of the past three years.

Following recent practice, South American specimens have been incorporated by E. P. Killip, West Indian by E. C. Leonard, continental North American by C. V. Morton, and Old World by E. H. Walker, who has practically completed the segregation of Old World material under subregional covers, thereby making it readily available for reference and study. In the division of plants more than 70,000 specimens were incorporated. Additional space was assigned to the grass herbarium, which in recent years has been greatly crowded. In addition, 40,410 mounted specimens were stamped and recorded preparatory to incorporation in the herbarium. This work was made possible by the temporary employment of a scientific helper. The segregation of type specimens of American phanerogams was continued by Mr. Killip and Mr. Walker; 18,276 types of new species and varieties are now distinctively labeled, specially catalogued, and placed in heavy individual covers. These comprise the type herbarium kept apart as a separate unit. More than 3,000 photographs of type specimens of American plants in other herbaria (chiefly European) were received during the year.

Concerning the C. G. Lloyd mycological collection, John A. Stevenson, honorary custodian, reports that all material in it has now been arranged and is available for reference, including 58,970 named fungous specimens with index, over 12,000 negatives of fungous subjects likewise with a complete index, and a series of notebooks of Mr. Lloyd's published data arranged by fungous groups, together with his miscellaneous manuscript notes. Following published notice of the completion of work on the collection, several mycologists of note have carried on studies in the herbarium, and various inquiries concerning it have been answered by correspondence. Sets of Lloyd photogravures were sent out to about 20 botanical institutions.

During the year 21,659 plant specimens were mounted by adhesive straps, all but 5,000 of these by contract. The number of specimens glued (chiefly by contract) is 10,400. Of these and glued specimens remaining from last year, 8,700 were "reinforced" by straps. The number of fully mounted specimens turned out during the year is 30,359.

RESEARCH BY MEMBERS OF THE STAFF

Research work by the curator of mammals resulted in the publication of a study of the processes of grayness and baldness in man and their apparent relationship to characters of analogous nature in other primates. Some progress was made in outlining a projected synopsis of the families and genera of primates. The assistant curator, Dr. Remington Kellogg, continued studies on the modern porpoises and identified the specimens of lemurs in the Museum and a

collection of small mammals taken by Mr. and Mrs. L. O. Sordahl in Southwest Africa.

In the division of birds, the curator, Dr. Herbert Friedmann, completed work on the birds collected by the Childs Frick expedition to Ethiopia and Kenya Colony, and the account of the passerine birds obtained by the Smithsonian African expedition under the late Theodore Roosevelt. He also finished a report on the passerine birds collected in Gabon by the Garner expedition and submitted to the Museum of Comparative Zoölogy for publication a study of the Loveridge Tanganyikan collections belonging to that museum. From time to time, as new forms were found, numbers of short papers containing their description were published, as well as several papers on biological topics. The associate curator, Dr. Charles W. Richmond, up to the time of his death compiled data for a new supplementary list of generic names applied to birds, which it is hoped may be published. The assistant curator, J. H. Riley, published a paper on Dr. J. F. Rock's extensive collections from Szechwan and Yunnan and continued work on a check list of the birds of Szechwan. Dr. A. Wetmore published a popular account of birds in the Smithsonian Scientific Series, volume 9, and also a paper on the avifauna of the Pleistocene of Florida. The ninth volume of A. C. Bent's *Life Histories of North American Birds*, on the gallinaceous group, was published during the year, and he has made considerable progress on the manuscript of the tenth dealing with the hawks.

In the division of reptiles and batrachians the curator has continued studies of American turtles, and the assistant curator, Miss Doris M. Cochran, has nearly finished an account of the herpetology of Hispaniola.

During the year Dr. J. M. Aldrich, curator of insects, prepared for publication several papers on various groups of Diptera, a list of which will be found in the bibliography. He also has in progress an extensive paper on flies of the family Tachinidae occurring in southern Chile and Patagonia. Dr. M. W. Blackman continued revisional work in the Scolytidae and completed several papers, including one on the North American species of *Scolytus*. Mrs. Doris H. Blake completed and offered for publication during the year a revisional paper on the chrysomelid genus *Dysonicha*. Dr. A. G. Böving, with Dr. F. C. Craighead, published a work on the larvae of Coleoptera, based almost entirely on larval material now incorporated in the Museum collections. L. L. Buchanan completed studies on the curculionid genera *Oligolochus* and *Anacentrinus*. Dr. E. A. Chapin finished two papers on Cuban Scarabaeidae, involving the description of a number of new species. W. S. Fisher

prepared three papers dealing with species of the cerambycid genus *Exocentrus* collected in connection with economic studies in India.

In the section of Lepidoptera Dr. W. Schaus prepared many descriptions of new species during the year and made important studies on the Macrolepidoptera of Puerto Rico and the Virgin Islands. F. H. Benjamin worked with the North American species of the family Noctuidae and made special studies in other groups. August Busck continued work on the family Tortricidae and brought to a close a study extending over several years on the importance of the female genitalia in the broader phases of the classification of the Microlepidoptera. Carl Heinrich continued his studies on the North American Phycitinae.

In Hymenoptera, A. B. Gahan devoted much time to the preparation of a paper discussing the parasites of the Hessian fly. R. A. Cushman prepared descriptions of a number of new species and completed and submitted for publication three papers—one dealing with miscellaneous notes on ichneumon-flies, one with the genus *Diapetus*, and one reporting on a collection of Ichneumoninae secured some years ago in the island of Formosa by H. Sauter. C. F. W. Muesebeck began revisional studies in the braconid sub-families Exothecinae and Rogadinae. Miss Grace Sandhouse continued studies on North American Halictinae and nearly completed her work on *Augochlora* and *Agapostemon*. In the order of orthopteroids and neuropteroids, a large part of the time of A. N. Caudell has been devoted to the completion of his index to North American Orthoptera, supplementing that published by S. H. Scudder in 1901 and carrying his literature-reference catalogue up to the year 1925. During the year he spent some time on a revision of the order Zoraptera and worked on certain groups of Orthoptera. Dr. H. E. Ewing continued work on the classification of chiggers, especially local species, and of various groups of parasitic mites. In Hemiptera, H. G. Barber completed a paper prepared jointly with S. C. Bruner, of the Cuban Agricultural Experiment Station, on the Pentatomidae of Cuba. A paper on the genus *Oncerotrachelus* was published and another on *Exptochiomera* was completed. P. W. Oman finished an extensive paper on the North American species of the leafhopper genus *Agallia*.

In the division of marine invertebrates, Dr. Mary J. Rathbun, associate in zoology, completed a report upon the specimens obtained by the New York Academy of Sciences expedition to Puerto Rico, as well as one upon a collection of decapod Crustacea from Curaçao, Bonaire, and Aruba. The text of a report upon the macruran and anomuran Crustacea of Puerto Rico and the Virgin Islands was completed by the curator, Dr. Waldo L. Schmitt. He also published

two papers on Oriental Crustacea, and had in course of publication at the close of the year a manuscript describing a new *Pasiphaea* from the South American collections of the Hamburg Museum. Clarence R. Shoemaker, assistant curator, finished a report on the Amphipoda of Puerto Rico and the Virgin Islands and another on the Amphipoda of Florida and the West Indies. He also did some work on the Amphipoda of the Bay of Fundy. Dr. J. A. Cushman, honorary collaborator, continued work on his series of papers covering the Tropical Pacific Foraminifera and his report on the Arctic forms taken by Capt. Robert A. Bartlett. The death of Dr. C. Dwight Marsh, honorary custodian of the fresh-water copepod collections, is recorded with great regret. He had been employed since 1905 with the Department of Agriculture, where he carried on investigations of poisonous plants. For many years he had also been interested in fresh-water copepods, and in August, 1930, upon his retirement from the Department of Agriculture, he came to the division of marine invertebrates to continue the latter work. Shortly before his death he completed a paper entitled "Synopsis of the Calanoid Crustaceans, Exclusive of the Diaptomidae, Found in the Fresh and Brackish Waters of North America," which supplements his earlier revisions of the North American species of *Diaptomus* and *Cyclops*.

Dr. Paul Bartsch, curator of mollusks, completed manuscripts on certain genera of Philippine land mollusks, to form parts of Bulletin 100 of the National Museum, and a number of papers describing new species of marine shells. The investigations of William B. Marshall, assistant curator, were chiefly continuations of his studies of South American fresh-water mollusks, and resulted in the preparation of a number of papers describing new forms.

The curator of echinoderms, Austin H. Clark, continued work on parts 4 and 5 of Bulletin 82, A Monograph of the Existing Crinoids, and completed reports on collections of crinoids received for identification from the British Museum, the Indian Museum, Calcutta, and the museum at Buitenzorg, Java.

Dr. Frederick V. Coville, curator of the division of plants, continued studies on the breeding and culture of blueberries (*Vaccinium*) and gooseberries (*Grossularia*). The principal herbarium studies were those of Dr. William R. Maxon on tropical American ferns; E. P. Killip on the flora of the South American Andes (especially *Passiflora* and several genera of Boraginaceae); of E. C. Leonard on the West Indian flora (especially of Hispaniola); C. V. Morton on the flora of the Southwestern United States and several tropical American genera; and E. H. Walker on the flora of China. Dr. A. S. Hitchcock, Mrs. Agnes Chase, and J. R. Swallen, of the grass herbarium staff, continued their studies of American grasses.

RESEARCH OF OUTSIDE INVESTIGATORS AIDED BY MUSEUM MATERIAL

During the meeting of the American Society of Mammalogists in May, 1932, a large number of visiting specialists availed themselves of the opportunity to examine material in the study series of the division of mammals. Richard Archbold, of the American Museum of Natural History, spent a week comparing mammals recently collected in the Celebes; Dr. M. W. Lyon, of South Bend, Ind., examined Indiana mammals in the collection and literature pertaining to them; Earl L. Poole, of the Reading (Pa.) Public Museum and Art Gallery, spent several days comparing specimens of North American mammals; Harold Coolidge, of the Museum of Comparative Zoölogy, Cambridge, Mass., took measurements of the chimpanzee skulls and skeletons; Adolph Murie, from the University Museums, Ann Arbor, Mich., spent considerable time on two occasions comparing a collection of Central American mammals; William P. Harris, jr., of Grosse Pointe, Mich., passed several days studying Central American squirrels; J. S. Doutt, of the Carnegie Museum at Pittsburgh, Pa., made notes on West African mammals; W. L. Engles, of Notre Dame (Ind.) University, made an extensive examination of specimens of the white-tailed deer; Dr. Chester Stock, of the California Institute of Technology, Pasadena, Calif., spent some time comparing recent mammals with fossils; Dr. A. H. Schultz, Dr. William Straus, jr., and A. B. Howell, of Johns Hopkins Medical School, Baltimore, Md., consulted the collection at different times. The Biological Survey staff had access at all times to the collections throughout the year in connection with their work on North American mammals. Dr. C. Lewis Gazin, of the division of paleontology, used the mammal collection in work on fossil mammals, and Dr. T. D. Stewart, of the division of physical anthropology, made continuous use of the primate collection in a study of the hair growth of primates. Various loans of mammal specimens were made to the American Museum of Natural History; the Zoological Laboratory, Cornell University, Ithaca, N. Y.; the Museum of Zoology, University of Michigan; the Field Museum of Natural History, Chicago; the California Institute of Technology, Pasadena, Calif.; the Johns Hopkins Medical School, Baltimore, Md; the Museum of Comparative Zoölogy, Cambridge, Mass.; and the Museum of Vertebrate Zoology, Berkeley, Calif.

Among outside investigators who made use of the collections and library of the division of birds were the following: Mrs. L. O. Sordahl, of the Smithsonian Institution, examined Southwest African birds; J. Hooper Bowles, of Tacoma, Wash., looked at various eggs; Dr. Alexander Skutch, of Baltimore, Md., examined Guatemalan birds; W. W. Bowen and H. R. Roberts, of the Academy of

Natural Sciences of Philadelphia, studied Trinidad birds; Dr. R. H. Palmer, of Caibarien, Cuba, examined Cuban birds; the Rev. J. J. Murray, of Lexington, Va., examined books and specimens of Virginia birds; M. A. Carriker, of the Academy of Natural Sciences of Philadelphia, spent two days studying Peruvian and Venezuelan birds; Dr. L. B. Bishop, of Pasadena, Calif., examined gulls; Mrs. L. V. Moore, of Washington, D. C., studied local birds' nests. Members of the Biological Survey staff made use of the collections as usual. Loans of ornithological material amounted to 460 specimens in 46 lots to various museums.

Dr. C. E. Burt spent more than a month studying North American reptiles. Dr. E. R. Dunn paid several visits of two or three days each; and, during the week of the meetings of the American Society of Ichthyologists and Herpetologists, Dr. E. H. Taylor, Charles F. Walker, Mrs. Grace Wiley, Mr. and Mrs. M. Graham Netting, Miss Laura Brodie, M. K. Brady, Dr. F. N. Blanchard, and Dr. S. C. Bishop examined material in the herpetological collection. J. Warren Large, of Cornell University, spent several days in studying Muhlenberg turtles, and Benjamin B. Leavitt studied the collection of *Bufo marinus*. Loans of herpetological material to outside investigators for study included 317 specimens.

In the division of fishes, Dr. Henry W. Fowler, of the Academy of Natural Sciences of Philadelphia, continued his investigations on the fishes of the Philippine Islands; Steuart Springer, of Biloxi, Miss., examined the snake-eels in connection with identification of material at Biloxi; F. M. Uhler, of the Bureau of Biological Survey, examined specimens in comparison with material from bird stomachs obtained at Klamath Lake, Oreg.; Isaac Ginsburg, of the Bureau of Fisheries, was furnished laboratory facilities in connection with his revision of the genus *Gobiosoma* and his work on the flatfishes (*Paralichthys*); John Tee-Van, of the New York Zoological Society, compared material from the coast of Bermuda; and Dr. E. W. Gudger, of the American Museum of Natural History, examined the collection of sharks' jaws in connection with a study of abnormal teeth and other defects found in the sharks and rays.

Material from the insect collections totaling 13,373 specimens was loaned to 62 students and institutions. Among those to whom large consignments were sent may be mentioned Richard P. Dow, of Cambridge, Mass., 95 wasps; David G. Hall, of Charleston, S. C., 415 flies; Dr. C. P. Alexander, of Amherst, Mass., 520 craneflies; S. Maulik, of the British Museum (Natural History), London, 337 beetle larvae; Charles Schaeffer, of Brooklyn, N. Y., 67 beetles; Dr. Joseph Bequaert, of Cambridge, Mass., 273 Hymenoptera and 100

flies; Dr. Hans Tauber, of Munchen, Germany, 210 Hemiptera; H. E. Dorst, of Salt Lake City, Utah, 697 Hemiptera; Prof. P. B. Lawson, of Lawrence, Kans., 719 insects; Dr. Walther Horn, of Berlin-Dahlem, Germany, 342 beetles; Dr. Charles D. Fluke, of Madison, Wis., 107 flies; F. W. Davis, of Salt Lake City, Utah, 1,024 bugs; British Museum (Natural History), 1,079 parasitic Hymenoptera; R. C. Shannon, of the Rockefeller Foundation, 32 flies; E. P. Breakey, of Columbus, Ohio, 402 insects; Prof. James G. Needham, of Ithaca, N. Y., 39 dragonflies; Kathleen C. Doering, of Lawrence, Kans., 177 insects; S. W. Bromley, of Stamford, Conn., 75 flies; Dr. Th. Dobzhansky, of Pasadena, Calif., 2,544 beetles; O. Ringdahl, of Helsingborg, Sweden, 269 flies; Dr. Alfons Dampf, of Mexico City, 627 flies; Dr. T. H. Frison, of Urbana, Ill., 1,256 bees; E. Uhmann, of Stollberg, Germany, 314 beetles; Dr. D. M. DeLong, of Columbus, Ohio, 697 insects; and James E. Collin, of Newmarket, England, 479 flies.

The division of marine invertebrates was able to continue its cooperative assistance in research work. Sixty-four separate shipments aggregating about 890 specimens were made to the following outside specialists, whose generous cooperation is highly appreciated: Dr. Henry B. Bigelow (medusae, Ctenophora); Dr. R. Boschma (rhiococephalids); Prof. Oscar Carlgren (sea anemones); E. P. Creaser (phyllopods, crayfishes); Dr. Wesley R. Coe (nemerteans); Dr. M. W. de Laubenfels (Porifera); Dr. Elisabeth Deichmann (Alcyonaria); Dr. W. K. Fisher (sipunculids); Dr. C. McLean Fraser (hydroids); Prof. Gordon E. Gates (earthworms); Dr. Libbie Hyman (Turbellaria, flatworms); Dr. Chancey Juday (Cladocera); Dr. Maynard M. Metcalf (Salpa, Pyrozoma, Protozoa); Dr. J. Percy Moore (leeches); Frank J. Myers (Rotatoria); Dr. Arturo Palombi (polyclad worms); Dr. A. S. Pearse (Isopoda); Dr. Henry A. Pilsbry (barnacles); Prof. Frank Smith (earthworms and fresh-water sponges); Dr. W. M. Tattersall (Mysidacea); Dr. A. L. Treadwell (Annelida); Dr. Willis L. Tressler (Ostracoda); Dr. C. B. Wilson (parasitic and free-swimming copepods); and Dr. H. V. Wilson (Porifera). In addition numerous loans were made to many other investigators.

In the division of mollusks a large number of students pursued studies upon material in the collection. Mrs. L. Sinitzin made extensive comparisons of fresh-water collections from the Western and Southern United States. Throughout the year members of the staff of the Geological Survey and of the Department of Agriculture have had access to the specimens in the division. In addition several students from the George Washington University pursued studies

upon molluscan material in the collection. Mrs. Marvin E. Fowler continued her studies on the Philippine Island marine mollusks of the family Turritidae; Edgar C. Bowles carried on biometric studies on the Cerions of the Cay Sal group, which resulted in a manuscript under the joint authorship of the curator and Mr. Bowles entitled "The Cerions of the Cay Sal Atoll"; José Gallardo carried on similar studies on the Cerions of Puerto Rico and wrote a paper on "The Cerions of Puerto Rico" jointly with the curator. Mrs. Mary Q. Bowman examined the anatomy of *Cerion (Cyclocerion) baconi*, collaborating with the curator in a manuscript entitled "A New Subgenus and Species of *Cerion* from Little Inagua, Bahamas"; Miss Ruth L. Griggs made a biometric study of a small group of Cerions from Inagua Island, producing with the curator a paper on "A New Subgenus and Species of *Cerion*"; John H. Machmer was engaged on a biometric study of the Cerions of San Salvador; Miss Mary Sproul pursued biometric studies on a group of Cerions from the island of Inagua and Howard Chittick on the Cerions of Salt Cay of the Turks Island group; Miss Harriet E. Bundick nearly finished her studies on the Philippine Island mollusks of the genus *Strombus*; Montgomery Morrow undertook biometric studies of certain Cerions from Grand Cayman; and Miss Pearl Hicks continued anatomical investigations of 100 hybrid Cerions from Cuba. Many specimens have been lent to outside investigators.

A small collection of helminthological slides was sent to Prof. George La Rue, of the University of Michigan, as a loan for study.

Charles T. Berry, of Johns Hopkins University, visited the division of echinoderms to study types of ophiurans. Dr. Th. Mortensen, of the Zoological Museum, Copenhagen, Denmark, continued work on the *Albatross* Philippine expedition echinoids, and Dr. Hubert Lyman Clark and Dr. Elisabeth Deichmann, of the Museum of Comparative Zoölogy, carried on similar work on the Philippine expedition holothurians. A loan of 8 holothurians and 21 brittle-stars was sent to the latter museum, and one holothurian to the museum in Hamburg, Germany, for study by Dr. A. Panning.

Dr. S. F. Blake examined a large number of plants, chiefly of the family Compositae, and John A. Stevenson studied various groups of fungi. Y. L. Keng, of the National Central University, Nanking, China, nearly completed his second year of a study upon the grasses of China under the general direction of Dr. A. S. Hitchcock. Other out-of-town botanists who have conducted studies at the herbarium, and the special subjects investigated, are as follows: Robert E. Woodson, jr., of the Missouri Botanical Garden (tropical American Apocynaceae); Prof. H. H. Bartlett, of the University of Michigan

(flora of Central America); Dr. H. A. Gleason, of the New York Botanical Garden (tropical American Melastomaceae); Dr. Ivan M. Johnston, of the Arnold Arboretum of Harvard University (tropical American Boraginaceae); Dr. Franklin P. Metcalf, of Lingnan University (flora of China); Arthur N. Leeds, of the Academy of Natural Sciences of Philadelphia (ferns of Florida and Jamaica); Dr. H. K. Svenson, of the Brooklyn Botanical Garden (the genus *Eleocharis*); J. A. Steyermark, of the Missouri Botanical Garden (the genus *Grindelia*); and C. A. Weatherby, of the Gray Herbarium of Harvard University (tropical American Pteridophyta). Botanical material lent for study to institutions and individuals during the year consisted of 176 lots, aggregating 17,850 specimens.

ASSISTANCE BY MEMBERS OF STAFF TO OTHER GOVERNMENT BUREAUS AND PRIVATE INDIVIDUALS

The assistance ordinarily extended to other Government bureaus by the specialists of the Museum, consisting to a great extent in identification of specimens and checking of nomenclature and references to literature, was rendered as usual. Among the bureaus thus assisted may be mentioned the Plant Quarantine and Control Administration of the Department of Agriculture, requesting determinations of animals intercepted in shipments of plants; the Biological Survey of the same department, inquiring into the identity of animals found in the stomach contents of various animals; the Bureaus of Animal and Plant Industry, determining parasites or their hosts; the paleontologists of the Geological Survey, comparing fossils with living bones; the National Zoological Park, identifying and labeling of rare animals; the Bureau of American Ethnology, determining bones and plant remains found during excavations of Indian sites. In addition, thousands of identifications were made for individuals and universities by the Museum specialists.

VISITS TO INSTITUTIONS OR PLACES ON OFFICIAL WORK

In May, 1932, Dr. A. Wetmore went to the west coast to inspect the large collection of fishes belonging to the National Museum that for many years have been in the custody of Stanford University to be worked up by Drs. David Starr Jordan and C. H. Gilbert, both recently deceased. He made arrangements to have them shipped back to the Museum in the near future.

Doctor Wetmore and Dr. Herbert Friedmann attended the annual meeting of the American Ornithologists' Union at Detroit, Mich., in October, 1931, when Doctor Wetmore also visited the Museum of

Zoology of the University of Michigan at Ann Arbor. Returning, Doctor Friedmann spent several days at the Field Museum of Natural History in Chicago working on Abyssinian birds. Later he made a visit to the Museum of Comparative Zoölogy at Cambridge, Mass., and the American Museum of Natural History in New York. Dr. Waldo L. Schmitt also visited the two museums last mentioned to examine their marine-invertebrate collections. Austin H. Clark, curator of echinoderms, attended the meeting of the American Association for the Advancement of Science at New Orleans, La., beginning December 28, 1931, as a representative of the Smithsonian Institution.

To identify a large quantity of herbarium material from the Andes of South America, including specimens collected upon expeditions sent out under the auspices of the Smithsonian Institution, E. P. Killip, associate curator of the National Herbarium, was absent four months on a trip to several European botanical institutions. Highly successful work was carried out at Berlin, Paris, Madrid, and London. Dr. A. S. Hitchcock, custodian of the grass herbarium, spent several weeks in examining specimens of grasses at the Gray Herbarium of Harvard University, the Eaton Herbarium of Yale University, the New York Botanical Garden, and the Academy of Natural Sciences of Philadelphia.

DISTRIBUTION AND EXCHANGE OF SPECIMENS

Duplicates distributed to museums, high schools, colleges, and similar institutions aggregated 1,243 specimens, of which 897 consisted of mollusks and fishes in five and four sets, respectively. Five specimens were transferred to other Federal Government agencies, as follows: One mammal to the Forest Service, three birds to the Department of the Interior, and one insect to the Bureau of Standards.

Exchanges to the number of 6,046 were sent out, of which 1,907 were zoological specimens. The 4,139 plants distributed went to 23 institutions and correspondents, of which 15 were located in the United States and eight in five countries abroad.

NUMBER OF SPECIMENS UNDER DEPARTMENT

The number of specimens under the department of biology, so far as has been ascertained by count and estimate, is now a little more than 10,450,000. The number is probably much greater, since several collections, as the corals, have not been included in the estimate, nor does the number of plants given below include unmounted material of the lower cryptogams.

Estimated number of specimens

Mammals	220, 097
Birds:	
Skins	251, 603
Alcoholics	8, 875
Skeletons	12, 654
Eggs	87, 491
	360, 623
Reptiles and amphibians	96, 465
Fishes	737, 012
Insects	4, 072, 856
Marine invertebrates	883, 234
Mollusks	2, 365, 832
Helminths	40, 187
Echinoderms	157, 992
Plants	1, 516, 480
Total	10, 450, 778

REPORT ON THE DEPARTMENT OF GEOLOGY

By R. S. BASSLER, *Head Curator*

INTRODUCTION

In his first report as secretary of the Smithsonian Institution, Doctor Abbot stated: "Not only must the task of collecting and preserving specimens of the fauna, flora, ethnological, and paleontological material at present available be diligently pushed forward, lest they be forever lost, but the intensive study of the collections must also be a major task, lest the lessons they might teach should be lost to our generation." This policy has largely dominated the activities of the staff of the department of geology during the year just closed, the achievements consisting not only of field explorations but of efforts to fill the more serious gaps in the collections in other ways. Though a fair amount of research is reported, this can not become a "major task" until the research workers can be relieved to some extent of the physical work incidental to the preparation of the material collected. Progress requires, too, that our exhibits keep pace with the times, and here again the scientist must give of his time and effort. Substantial progress along these several lines of endeavor has been made in all divisions of the department.

ACCESSIONS

The aggregate number of specimens received was greater than last year, although the accessions were fewer, numbering 219 with a total of 21,395 specimens. The recorded number for the various divisions is as follows: Mineralogy and petrology, 59 accessions, 756 specimens; geology, systematic and applied, 33 accessions, 476 specimens; stratigraphic paleontology, 98 accessions, 18,549 specimens; vertebrate paleontology, 29 accessions, 1,614 specimens.

The accessions of the past year are characterized particularly by the amount of exhibition material acquired through various endowments, gifts, and explorations.

The outstanding mineral specimen of the year is a nugget of gold weighing 81 ounces troy, from Greenville, Plumas County, Calif., brought to our attention by the Ontario Mining Co. and purchased through the Roebling fund. The nugget was formerly in the collection of the late M. L. Morgenthau, of New York City, to whom was furnished the following information:

Nugget found near Greenville, Plumas County, California, at Union Placer mine owned by two old miners, Joe Baccala and Billy Roedde, who had been

working mine each spring for years expecting to make a strike each year. When they uncovered nugget thought it was a piece of old iron. Upon picking it up Roedde realized the value and passed it to Baccala who was throwing it down when he realized it was gold and they cried and screamed for joy. Kept the nugget as long as they could afford then had to sell it. * * * Largest single nugget found in California in years. Has been viewed by hundreds of people from over the State.

A second interesting specimen acquired through the Roebling fund is of crystallized leaf gold, said to be the first leaf gold mined in California in 1849 and called the "wish nugget," because everybody who saw it "wished they had it."

Among other items credited to this fund are: A fine crystal of the lead mineral phosgenite on matrix, from Sardinia; eight specimens of rare uranium minerals—kasolite, fourmerierite, dewindtite, and parsonite—from Bavaria; two radium minerals, sklowdowskite and dumontite, from the Belgian Congo; a large mass of huge vanadinite crystals from Southwest Africa—an excellent exhibition piece; and two flawless crystals of aquamarine.

To the Canfield collection were added large exhibition slabs consisting of a base of crystallized dolomite on which are crystals of galena, sphalerite, chalcopyrite, and marcasite, from Oklahoma; also a large mass of pale blue botryoidal smithsonite from New Mexico, equally striking for exhibition purposes.

By exchange, type specimens of the rare minerals nagatelite and kalkowskyn were obtained from their describers, Prof. S. Iimori and Dr. E. Rimann, respectively. A small specimen of analyzed pollucite, from which the formula of the mineral was determined, was presented by Dr. E. A. Chapin, of the United States Department of Agriculture.

Miscellaneous minerals donated by Frank L. Hess include pitchblende and its alteration products from Great Bear Lake, Canada; the rare carbon mineral thucolite in large pseudomorphous crystals; and analyzed samples of a caesium-bearing biotite from North Dakota.

Specimens of exhibition value include a group of large brilliant crystals of the interesting silicate mineral babingtonite, received as an exchange from Harvard University; and two large, well-formed crystals of feldspar from the quarry of the Seaboard Feldspar Co. at Moneta, Va., donated by the company and by B. R. Harris.

Among other gifts are a fine specimen of the new silicate of barium, sanbornite, received from John Melhase; a mass of pitchblende from the newly discovered radium deposits at Great Bear Lake, Canada, received from S. R. Cragg; a suite of miscellaneous minerals from North Carolina presented by B. S. Colburn, including the newly described species of manganese minerals, galaxite and alleghanyite;

bloedite crystals from the salt deposits of Hallstatt, Austria, given by Herrn Bergrat Ing. Karl Krieger; a quantity of cerite and its associated minerals from Jamestown, Colo., from Charles R. Burger; a large exhibition specimen of cyanite and andalusite from Maine, presented by H. Wallace Noyes; two large crystals of topaz from Amelia, Va., by S. V. Morefield; and five sand barite crystals from Oklahoma, locally called "sand roses," received from Karl Hermann.

For a special exhibit to be installed of the coral used as gem material, a Chinese carved figure was procured through the Chamberlain fund. Other additions to the Isaac Lea collection include an attractively carved vase of Siberian malachite; several fine-quality opals purchased in Mexico by Dr. W. F. Foshag; two engraved moonstones, which add an entirely new note to the feldspar series of gems; and a peculiar pale salmon-colored topaz, also new.

Examples of four meteorites were added to the collection: Through the Roebling fund a 500-gram slice of the recently described unique iron from Chihuahua, Mexico; and by exchanges a 1,200-gram slice of the Sandia Mountains hexahedrite, a 190-gram piece of the highly graphitic Winona iron, and an 880-gram end piece of the Baquedano, Chile, iron, received from H. H. Nininger, L. F. Brady, and Harvard University, respectively.

The most important accessions to the economic collections were received from companies and private parties in response to requests made by members of the division. The hearty cooperation and enthusiastic interest shown by these various friends of the Institution are most gratifying and encouraging. Many of the specimens were obtained at considerable expense and trouble to the donors. Notable among them are the following:

A large specimen of gold ore from the Crown Mines, Johannesburg, South Africa, was obtained through the cooperation of the Geological Survey of the Union of South Africa. This is a flat mass about 2 feet square and shows the pebble conglomerate with which is associated the gold, inclosed in a fine-grained sandstone. The Champion Porcelain Co., of Detroit, donated a large, showy specimen of dumortierite from their quarries in Pershing County, Nev., and two large andalusites from their California mines. Several smaller hand specimens for our study series were included. Two large, rounded boulders of cyanite from Kharsawan, India, were presented by Charles Taylor Sons Co., of Cincinnati, Ohio. The Rosclare Lead & Fluorspar Mining Co. donated two fine samples of fluorspar; copper ores from Chuquicamata were obtained from the Chile Exploration Co.; and a series of lead minerals and ores from the Ahumada Mine, Mexico, was given by the Compania Minera de Plomo, of El Paso, Tex.

A large piece of nickeliferous pyrrhotite from Yakobi Island, southeastern Alaska, presented by S. H. Vevelstad; two attractive specimens of gold ore from Australia, by Robert J. Grant; and a collection of Hawaiian lavas, by Mrs. Charles D. Walcott are among other notable gifts. Lafayette Franklin, of Washington, D. C., presented a miscellaneous collection that included a fine suite of gold telluride ores from Cripple Creek, Colo., and of tungsten ores from various localities. Through Aubrey E. Horn, manager, the Naraguta Korot Areas (Ltd.), of Nigeria, sent a fine set of Nigerian tin ores and a few of the local minerals in exchange for a series of American ores.

The United States Geological Survey transferred several described sets of rocks and ores, the following districts being represented: Park City, Utah; Alleghany, Calif.; and Takilma-Waldo, Oreg.

In the division of stratigraphic paleontology, accessions of fossils from several continents, important in building up the collections, are recorded under the heading of exchanges. Carboniferous brachiopods from Bolivia were sent by the University of Poland, through Prof. Roman Kozlowski, who for seven years was head of the Bolivian Mining School and thus acquired much fine material. From Lehigh University was secured a large collection of brachiopods from European countries. The famous Charles Schuchert collection at Yale contributed 81 brachiopods; the museums at Oslo and Stockholm furnished species that were lacking; Cornell and Columbia Universities furnished others. Additional European material was given by Dr. A. Öpik, of Tartu, Estonia; Dr. Johann Wysogorsky, of Hamburg, Germany; and Dr. B. B. Bancroft, of the Sedgwick Museum, Cambridge, England.

Two exchanges arranged by Dr. John B. Reeside, jr., of the United States Geological Survey, brought to our collections 555 specimens, representing 400 species of the English Jurassic, transmitted by the British Museum (Natural History), and two lots comprising 200 specimens from the Upper Cretaceous of Colorado from Prof. R. D. Coffin, of the Colorado Agricultural College.

Several valuable fossil collections were presented, most notable being the fourth shipment of the private collection of Dr. A. F. Foerste, numbering about 10,000 specimens. Approximately 2,500 specimens from the Devonian of New York were presented by Dr. G. Arthur Cooper, assistant curator, who collected them while on his vacation, and an additional 2,000 specimens from the same State, collected in connection with his studies, were deposited by James S. Williams.

The Standard Oil Co. (New Jersey), through Dr. Edwin Kirk, presented 60 Devonian fossils from Bolivia, and Prof. W. H. Shi-

deler, of Oxford, Ohio, donated 53 brachiopods of genera needed for study.

To the Springer fund are credited 56 specimens of excellently preserved echinoids from the Cretaceous rocks of Texas, and seven slabs of the well-known Devonian slate from Bundenbach, Germany, carrying fine specimens of crinoids. Preserved in pyrite and standing in relief on the dark slate, these are striking exhibition specimens.

Chiefly through the continued interest of Dr. Mary J. Rathbun, 15 lots of crustaceans were donated from various sources, especially Dr. Hubert G. Schenck, of Stanford University.

Several single specimens are worthy of special mention: A rare crinoid preserving crown, stem, and anchor, gift of J. W. Wells; a specimen of a large Devonian glass sponge from Chautauqua County, N. Y., received from Augustana College, Rock Island, Ill., in exchange; and the type specimen of a new genus of brachiopod, presented by Dr. Lawrence Whitcomb.

Transfers from the United States Geological Survey include several lots of Cambrian fossils and one lot comprising 350 specimens from the Tertiary of southern Florida, described by W. C. Mansfield.

Of the eight accessions of paleobotanical material, four were of types illustrating publications by the United States Geological Survey and were transferred by that organization. They include Cretaceous plants from southwestern Wyoming and Green River plants described by Dr. R. W. Brown, plants described by Dean E. W. Berry, and a large collection from the Tertiary of Alaska studied by Dr. Arthur Hollick.

The division of vertebrate paleontology records the material resulting from its field explorations as the most important of the year's acquisitions, with especial benefit to the mammal collections. The curator's party procured a considerable part of a large creodont, *Pachyaena gigantea*, a carnivorous mammal; three partial skeletons of *Coryphodon*, a hippopotamuslike animal; a skull and skeletal parts of the rare *Dromomeryx*; skull and lower jaws of *Calamodon*; and a skull, jaws, and much of the skeleton of one of the larger Miocene merycoidodonts. In addition there are many skulls, jaws, and articulated limbs and feet of both large and small mammals, which, scientifically, may prove to be the most valuable part of the collection. Six more or less complete skulls of the primitive alligator *Allognathosuchus* and fragmentary parts of at least five individuals of *Diatryma*, the giant flightless bird, and a few well-preserved turtle specimens were also included.

The field party under Norman H. Boss secured from the Pliocene deposits near Hagerman, Idaho, material exceeding in both quantity and quality that obtained in previous years from this quarry. Four

partly articulated skeletons, 32 skulls, 48 jaws, and a vast number of bones representing all parts of the skeleton of the extinct horse *Plesippus shoshonensis* comprise the main features of the collection.

A small collection of Oligocene fossils purchased from G. F. Sternberg contains many choice specimens not previously represented in the division, and interesting material was added to the avian collection through gifts of W. W. Holmes, of St. Petersburg, and J. E. Moore, of Sarasota, Fla.

INSTALLATION AND PRESERVATION OF COLLECTIONS

A case containing minerals and rocks collected at Crestmore, Calif., to illustrate the effects of contact metamorphism, and the installation of one of the large feldspar crystals on a pedestal near the case containing the feldspars of the economic series, constitute entirely new exhibits in the division of mineralogy and petrology, and a temporary exhibit, installed in an upright case, illustrates the occurrence of silver and copper ores in some of the important mining districts.

The study collection of minerals was expanded and its cleaning and rearrangement progressed. In the course of this rearrangement an accurate index of the material is being prepared for reference purposes. A number of ore specimens were cut and polished, thereby rendering them far more valuable as study specimens since the structure and mineral relationships are shown to better advantage.

As planned last year, the head curator selected the subjects and assembled several hundred new lantern slides for use in the stereomotorgraph, which operates in the building-stone hall. Sets of slides featuring glaciers, caves, volcanoes, wind action, and the characteristic life of the different geologic periods were added during the year, so that it is now possible to change frequently the subjects illustrated. The head curator, continuing his studies of the Ordovician and Silurian invertebrates, spent considerable effort in working up unstudied collections and placing them in final Museum form.

In the division of stratigraphic paleontology noteworthy progress was made toward a more usable condition of the collections. The assistant curator's efforts were directed largely toward a reorganization of the Devonian collections.

Drs. R. W. Brown and C. B. Read continued their voluntary work on the fossil-plant collections, while Dr. John B. Reeside, jr., in Dr. T. W. Stanton's absence, looked after the Mesozoic fossils. The Cenozoic collections in Dr. Paul Bartsch's charge were cared for by the Geological Survey workers engaged in studies on fossils of that era. The services rendered by these Survey paleontologists well repay the Museum for furnishing them with working quarters.

Dana Wells was employed during June under the Springer fund in the preparation of unworked crinoids in the Springer collection and in the final arrangement of the numerous blastoids contained therein. An excellent series of crinoids from the Rochester shale of New York was added to the study series as a result of this work.

Little except the ordinary routine was done on the paleontological exhibits until near the close of the year, when active work was begun on the installation of new material and rearrangement of the older exhibits. Following changes incidental to the mounting of the *Diplodocus* skeleton last year, only renovation and minor repairs were found necessary in the hall of vertebrate paleontology. The entire force therefore concentrated on laboratory work, and they worked most of the year on the horse (*Plesippus*) material from Idaho, with the result that this entire collection has been prepared. The 1931 Bridger Basin collection was next taken up, with the result that two skeletons, a complete one of *Hydrachnus* and an incomplete one of *Palaeosyops*, were prepared.

The fossil cetacean collection, systematically arranged by Dr. Remington Kellogg, is in the best condition in its history, and Dr. C. L. Gazin made a tentative arrangement of other mammal groups which will be refined as time permits.

INVESTIGATION AND RESEARCH

The head curator has continued work on several research problems in his special field, post-Cambrian paleontology and stratigraphy, and has particularly advanced his study of Ordovician and Early Silurian corals. His volume, *The Stratigraphy of the Central Basin of Tennessee*, was issued in June, 1932, as Bulletin 38 of the Tennessee Geological Survey. The bibliographic index of Paleozoic Ostracoda submitted for publication last year was brought up to date. A monographic study of the Tertiary Bryozoa of Australia, in collaboration with Dr. Ferdinand Canu, was brought to a close by the latter's untimely death. Doctor Bassler will endeavor to complete the manuscript and plates of this extensive work during the coming year.

A paper on the ore deposits of Los Lamentos, Mexico, was completed by Dr. W. F. Foshag, and his investigation of the borate deposits of the United States is practically finished. He did preliminary work on some interesting salt minerals of southwestern Africa, as well as additional work on the ore deposits of Mexico.

A series of chemical analyses on the orthorhombic members of the amphibole and pyroxene groups was undertaken by E. P. Henderson, who will continue this work until a well-distributed series of the two mineral groups has been studied.

James Benn made a brief investigation of the huge feldspar crystals found at Moneta, Va. He also began a systematic examination of all specimens in the study series as regards their fluorescent and phosphorescent properties under ultra-violet rays. Some new and striking fluorescent occurrences have been found.

Dr. C. E. Resser, in collaboration with Dr. E. O. Ulrich, completed a second paper on the Cambrian of Wisconsin, and a joint work with Dr. R. Endo on the Cambrian of Manchuria will be submitted for printing within the coming year. Requests from the United States Geological Survey and other sources necessitated additional work on his Cambrian summary, and various faunal lists for publication were also required.

Dr. G. A. Cooper continued his study of the Ozarkian and Canadian brachiopods, which is nearing completion, descriptions of 20 genera and 75 species being in manuscript form. A brief paper on the brachiopod family *Tripleciidae*, in collaboration with Doctor Ulrich, is almost finished. In addition, some progress was made on a catalogue of Devonian genera, a compilation in which Miss Marion F. Willoughby assists. She is also engaged in the preparation of a catalogue of Paleozoic coral genera, which should be in manuscript form some time next year.

Dr. Mary J. Rathbun completed a report on the fossil decapod, stomatopod, and isopod Crustacea of the Atlantic and Gulf Coastal Plain.

C. W. Gilmore finished a manuscript descriptive of the dinosaurian fauna of the Iren Dabasu formation of Mongolia, and also a short description of a new species of turtle from the Upper Pliocene of Idaho. A beginning has been made on a study of the Dinosauria of the Two Medicine formation of Montana.

Dr. C. L. Gazin, almost immediately after his appointment to the staff, took up the study of the Cumberland Cave fauna, a work left unfinished by the late Dr. J. W. Gidley. Gratifying progress may be reported on this extended study. Doctor Gazin also undertook a study of the large series of *Plesippus* skulls, in order to make the duplicate material available for exchange.

Dr. Remington Kellogg, as in previous years, continued researches on the cetacean collection, with especial attention to our unrivaled collection of zeuglodont material.

In addition to his joint studies with the curator and assistant curator, Dr. E. O. Ulrich engaged in collaborative work with Dr. A. F. Foerste on Early Paleozoic cephalopods, and with Dr. Josiah Bridge on gastropods. Considerable advancement was made in these studies.

A brief paper descriptive of several strange Lower Cambrian fossils was prepared by Dr. R. Ruedemann.

Dr. T. Kobayashi, of Tokyo Imperial University, arrived at the Museum in October for a stay of nearly two years, bringing with him large collections of early Paleozoic fossils from Manchuria and Korea, for comparison with American forms. Doctor Kobayashi is accompanied by Madame Kobayashi, who assists him in his work.

Dr. A. F. Foerste continued his studies on our cephalopods last summer, and again at Christmas spent about 10 days with us. Near the end of the fiscal year he arrived to remain indefinitely, having retired from teaching. This will afford us the great benefit of Doctor Foerste's knowledge of Paleozoic fossils in general.

During the last two weeks of the year Dr. Leif Stormer, of the Paleontological Museum of Oslo, Norway, studied Burgess shale and other Crustacea.

In paleobotany, Dr. R. W. Brown continued his study of Fort Union flora, Dr. C. B. Read wrote a paper on oak woods, and Dr. David White prepared a paper descriptive of the flora of the Worthington sandstone member of the Fayetteville shale and a report on the Jack Fork and Sandy formations of Oklahoma-Arkansas.

Dr. George Gaylord Simpson, of the American Museum of Natural History, submitted a short paper on a new Paleocene mammal from a deep well in Louisiana, based on Museum material loaned him for study. Through a cooperative arrangement, our entire Paleocene mammal collection, consisting of 800 specimens, has been placed in Doctor Simpson's hands for study and description.

Dr. Horace Elmer Wood, 2d, studied rhinoceros specimens from the Miocene of Montana. His paper descriptive of one of these was forwarded for publication.

Dr. R. S. Lull utilized the collection to further his monographic revision of the ceratopsian dinosaurs.

Dr. W. F. Foshag spent several days examining the collections at the Geological Survey of Mexico and at the National Museum of Mexico. Dr. G. A. Cooper was detailed to visit Yale and Columbia Universities, where he secured valuable material. Dr. C. E. Resser visited various museums in Europe, particularly in the interest of his Cambrian summary, but advantage was taken of the opportunity to study methods of installation and to arrange for exchanges of mutual benefit.

On his way to the Montana fossil fields, C. W. Gilmore visited the Colorado Museum of Natural History at Denver, and later in the

year visited the American Museum of Natural History to examine specimens in their collection.

Dr. R. S. Bassler visited various museums in England, Austria, and Hungary in the interests of the Springer collection, and incidentally perfected arrangements for a number of exchanges.

DISTRIBUTION AND EXCHANGE OF SPECIMENS

The records show the following distributions: Gifts, 3,595 specimens; exchanges, 5,162 specimens; loans for study, 2,926 specimens.

NUMBER OF SPECIMENS UNDER DEPARTMENT

The total number of specimens in the various divisions in the department of geology is as follows:

Mineralogy and petrology-----	140, 314
Geology, systematic and applied-----	95, 083
Stratigraphic paleontology-----	1, 830, 362
Vertebrate paleontology-----	27, 009
Total -----	2, 092, 768

REPORT ON THE DEPARTMENT OF ARTS AND INDUSTRIES AND THE DIVISION OF HISTORY

By WILLIAM DEC. RAVENEL, *Director of Arts and Industries*

INTRODUCTION

The department of arts and industries and the division of history advanced along several lines during the year, with additions to the collections that were of unusual value. The George Washington Bicentennial, which opened on February 22, 1932, gave special impetus to historical matters generally, resulting indirectly in the rearrangement of an important part of the historical collection of the Museum.

The organization of the department was strengthened by the consolidation of the divisions of mineral and mechanical technology into a single division—the division of engineering—with Carl W. Mitman as curator. The division has three sections: Mechanical technology, under Frank A. Taylor, assistant curator; aeronautics, under Paul E. Garber, assistant curator; and mineral technology, under the immediate charge of Mr. Mitman.

Rudolf Eickemeyer, of Yonkers, N. Y., a benefactor of the Museum who died near the end of the year, provided in his will for a trust fund, the income of which, after the death of his widow, is to be used for the maintenance of collections in the section of photography. This is the first recognition of this kind of any of the collections in the department of arts and industries.

Through a grant from the Smithsonian Institution, Carl W. Mitman, curator of engineering, went to Europe in May, 1932, to study the engineering, industrial, and science museums, and he was still so engaged at the close of the year.

The writer finds that after nearly half a century in the Government service he will leave the Museum at the close of June 30, 1932. In breaking ties of so long standing, he desires to place on record an expression of his appreciation of the assistance and comradeship of his associates, and to extend his best wishes for the continued success of the good work of the Institution. In this, his last report on the operations of the department of arts and industries and the division of history, he must record the loyal support of the members of his staff during the year and the helpful cooperation of the associate director of the Museum, which are responsible for much of the results recorded in this report.

ACCESSIONS FOR THE YEAR

With very limited funds for the purchase of specimens, the Museum is dependent largely on the generosity of manufacturers and friends to build up its industrial and historical exhibits. Through lack of space, acquisitions have now to be limited mainly to specimens needed for filling gaps in existing series, rather than to expanding the scope of the collections, though in exceptional cases unique examples are accepted in lines not previously represented in the Museum.

The total number of specimens acquired during 1932 was 9,361, about the same number as received in 1930, but decidedly less than for 1931. The scientific and intrinsic value of the increment, however, probably surpassed that of any previous year. The specimens received were assigned as follows: To engineering, 555; textiles, 253; organic chemistry, 559; wood technology, 333; foods, 1; history of agriculture, 4; medicine, 599; graphic arts, including photography, 1,001; and history, 6,056.

Only the most noteworthy can here be mentioned in detail, but all are hereinafter accounted for in the list of accessions.

Engineering.—The additions to the division of engineering, numbering 555 specimens, were decidedly fewer than during the preceding year, but probably made up in scientific value what was lacking in quantity. There were assigned 286 specimens to the section of aeronautics, 118 to the section of mechanical technology, and 151 to the section of mineral technology.

The principal accessions in the section of mineral technology were a large assortment of coal-mine and miner's equipment, a group of natural abrasive products, a number of models of manufacturing machines, and products illustrating the production of artificial abrasives. Manufacturers of coal-mining tools and equipment for mines and miners responded liberally to requests for their products to be used in fitting out a full-size model of a soft-coal mine under construction in the coal-industries court. The manufacturers who contributed are as follows: The Portable Lamp & Equipment Co., electric and oil safety lamps; the Wolf Safety Lamp Co. of America (Inc.), safety lamps; the Buckeye Aluminum Co., lunch bucket; the Mine Safety Appliances Co., miner's belts, self rescuers, protective hats, and first-aid kit; the Edison Storage Battery Co., electric hat lamps; the American Optical Co., protective goggles; the United States Rubber Co., water hose and rubber footwear; the Martin Hardsocg Co., mining tools; the Philips Mine & Mill Supply Co., mine car; and the Egyptian Tie & Timber Co., wood ties and timbers. The Bethlehem Steel Co. last year contributed a steel mine railway unit for this exhibit.

The Pike Manufacturing Co. presented 26 new specimens illustrating the preparation of natural abrasive products. The specimens include abrasive rock in various stages of manufacture and many finished stones in the ordinary as well as unusual shapes for common and special manufacturing purposes. The Carborundum Co. presented an attractive exhibit portraying the manufacture of carborundum and aloxite artificial abrasive products. The steps in converting raw materials to finished products are shown by 10 well-executed models of the electric carborundum furnace, crushers, mixers, a hydraulic press, a grinding wheel lathe and testing head, a continuous abrasive cloth coating machine, and an abrasive cloth cutting machine.

The section of aeronautics, functioning in its first year as a separate unit under an assistant curator devoting full time to its improvement, reflected this concentrated attention in the number and quality of its accessions. The outstanding specimens received during the year were the first autogiro to fly in America and the original Packard-Diesel airplane engine. The autogiro was invented in Spain and improved in England, and it was in the latter country in 1928 that Harold F. Pitcairn became impressed with this new type of aircraft. He purchased an example from the inventor, Juan de la Cierva, and brought it to America, where it formed the basis for the industry that he established. On July 22, 1931, this historic machine was flown to Washington by James Ray, vice president of the Autogiro Co. of America, landed on the lawn in front of the Arts and Industries Building, and formally presented to the Museum.

The Collier trophy, awarded annually by the National Aeronautic Association for the outstanding accomplishment in American aeronautics, was presented for the year 1931 to the Packard Motor Car Co. for its production of the Packard-Diesel aircraft engine. Several months prior to this official recognition, the Museum had successfully petitioned that company to place their original engine in the national aircraft collection. This gift was later embellished by a group of framed photographs illustrating types of Packard-Diesel engines in service.

Particular mention should be made of another addition to this phase of the collection, in the form of a Caminez engine presented by the Fairchild Aviation Corporation. The Caminez principle employs a figure "8" cam instead of a crankshaft, and although 4-cycle in action it generates a power stroke per revolution for each cylinder. In the Museum specimen this interesting action is visible through a sectionalized portion. An 8-cylinder, air-cooled V Renault engine was received from Henry L. Brownback; two modern 12-cylinder, water-cooled Packard engines and a 2-cylinder, opposed

air-cooled Wright-Moorhouse engine were transferred from the War Department.

The propeller exhibit, which is an outstanding feature of the aircraft collections, was enhanced by the addition of 30 specimens. These include four original types used by Professor Langley and deposited by the Smithsonian Institution; a Curtiss propeller of 1910, used by Eugene B. Ely in the first ship-to-shore flight, and given by his father, Col. Nathan D. Ely, United States Army, retired; a variable pitch propeller given by James B. Lund and Royal D. Dwight, who designed the propeller for a tandem quadruplane of 1911; three experimental metal propellers donated by Dr. S. Albert Reed, who made and used them in the researches which led to his invention of the Reed propeller; a group of one Micarta and eight wooden propellers, transferred from the National Advisory Committee for Aeronautics; an early form of wooden propeller given by A. H. Hoyt, who flew with it about 1914; a metal propeller of modern form given by its makers, the Hamilton Standard Propeller Co., and several other propellers of importance in portraying the evolution of the air screw.

An interesting historical aeronautical model was added to the collections. William de Leftwich Dodge, now a prominent mural painter, was, in the nineties, studying art in Paris. There he met many of the aeronautical pioneers of that day. From witnessing their experiments and engaging in their discussions he formed his own conception of an aircraft, and upon returning to America in 1900 he put his idea into practice. The result was a biplane model of about a 5-foot span, driven by a steam engine actuating both vertical and horizontal propellers, which actually flew. The demands of his profession prevented his further development of the idea. Through the kindness of Romer Shawhan, of New York, the existence of this model was brought to the attention of the Museum, and, as it was found to embody ideas quite advanced for the date of its origin, Mr. Dodge was persuaded to add it to the collections.

Several models of modern aircraft were received, notably a miniature about one-eightieth size of a Goodyear-Zeppelin airship similar in design to the Navy's rigid dirigible *Akron*. Through the kindness of the Navy Department, a number of photographs of the *Akron* showing its construction and service were placed with the model. A one-sixteenth size model of Louis Bleriot's type XI airplane in which Bleriot made the first over-water flight, crossing the English Channel in 1909, was acquired. An addition to the types of World War planes was received in a one-sixteenth size model of a French Nieuport 27-C pursuit plane, presented by Alfred Moe. A current type of military airplane is illustrated in a one-twentieth

size model of a Curtiss Falcon, made by Corpl. Raymond Jenkins, United States Army, and loaned to the Museum by William R. Enyart. Recent commercial aircraft are represented by models of a Waco Straightwing, Waco Taperwing, and Travelair Mystery "S," made by Donald Bruce, Edwin Geigan, and Douglas Bruce, respectively.

Various other existing exhibits were improved by addition of related specimens. The display of parachutes was augmented by the gift from S. L. Van Meter, jr., of his original experimental model and a full-size pack-parachute. These embody ideas for release of the parachute and are important links in the development of life-packs. The Story of the Wright Brothers, a series of illustrations depicting the life and accomplishments of Wilbur and Orville Wright, was improved by the addition of several frames, two on the Fort Myer, Va., flights of 1909 having been prepared with the assistance of Edward H. Young, who presented several photographs which he secured when witnessing the flights.

The air-mail exhibits were increased by the interest of Farr Nutter, a former air-mail pilot, who presented a map, letters, and data illustrating the flight in which he piloted the first run of the trans-continental air mail of 1921. From Erik Hildesheim, by exchange, the Museum received an original balloon-poste letter sent out from Paris during the seige of 1870, two original early air-mail postcards, and a number of photographs of pioneer air-mail ventures. James C. Edgerton loaned the flying togs of and some data relative to the first air-mail flight between Philadelphia and Washington in 1918, which he piloted.

A number of illustrations of early engines and a copy of the Gordon Bennett plaque won in the first international air contest, Rheims, France, in 1909, were added to the case commemorating the work of Glenn H. Curtiss. The original plaque was borrowed from the National Aeronautic Association, and a reproduction was made for the Museum through the kind assistance of the United States Army Aeronautical Museum.

The Hall-Scott Motor Car Co., makers of aircraft engines, gave a propeller of 1917 and a number of early photographs and data relative to fliers of pioneer days who used their engines.

For some years the Museum has displayed the balloon basket and aerostatic apparatus in which Capt. Hawthorne C. Gray, United States Army, on November 4, 1927, ascended to a height of more than 8 miles, surpassing all previous ascents by man. This year, through the kindness of his widow, there was added his original log, in his own handwriting, made during the ascent.

The War Department materially increased the display of aircraft instruments by a transfer of 13 specimens. These have been labeled

with the idea of assisting the student flier better to understand the functioning and purpose of these important aids to flight.

A case was recently completed commemorating the first coast-to-coast flight, made in 1911 by Calbraith P. Rodgers flying a Wright type "B" airplane and requiring 49 days for the trip. A one-sixteenth size model of the plane was made for the Museum; and the Carnegie Museum, of Pittsburgh, Pa., gave a map of the route, a booklet prepared by the pilot, and two photographs of the original plane as now preserved in that museum. Photographs taken en route were presented by the Aero Club of Pittsburgh, Theodore L. Chase, and Erik Hildesheim.

In the section of mechanical technology, to the collection illustrating the development of land transportation, four vehicles were added, practically completing the record of horse-drawn passenger vehicles in the United States. A 1-horse, 2-wheeled gig of about the year 1790, loaned to the Museum by Mrs. Delia Bayly Orem, Mrs. Carrie Bayly Webster, and Alexander Shepherd Bayly, represents one of the earliest types of wheeled vehicles to be used in America. This is said to have been used by Josiah Polk in making a trip from the Eastern Shore of Maryland to Boston, Mass., before the end of the eighteenth century, when few roads worthy of the name existed outside of the important cities and towns. A remarkably well-preserved chaise was permanently added to the collection and illustrates a popular type which, though among the first vehicles to be used in America, continued in wide use down to the retirement of the horse from the passenger-carrying field. This chaise was made before 1830 at Union, Me., and is the type immortalized in the poem The Wonderful "One-Hoss Shay," by Oliver Wendell Holmes. A hansom cab of excellent quality with harness and livery and in perfect condition was presented by Mrs. James Parmelee; and a Victoria was transferred to the Museum by the Quartermaster Corps of the War Department. The latter was the last horse-drawn vehicle used at the White House.

A gap in the collection showing the development of the automobile was filled by the receipt of an electric brougham of about 1900, as a gift from Mrs. Herbert Wadsworth. This is a large and formal closed car with the exposed driver's seat located at the back and at the level of the roof. The vehicle, made by the Riker Motor Co., dates from the days when electric cars were winning automobile races and were relatively more advanced than gasoline cars.

During two months of the year the division held in the transportation hall an exhibit commemorative of the one-hundredth anniversary of the first running of the locomotive *John Bull* on November 12, 1831. The Pennsylvania Railroad Co., whose system now in-

cludes the Camden and Amboy Railroad on which the first trip of the locomotive was made, cooperated in loaning for the occasion an original car of 1837 and many pictures, records, and models of great interest. In this connection Miss Emma S. Herbert presented two photographic copies of a letter describing the first trip of the locomotive *John Bull* written by her ancestor, Gen. Obediah Herbert, who was an eye witness of the event.

The New York Central Lines and the Pennsylvania Railroad contributed short lengths of their most recent rail sections, to be added to the collection of American railroad rail sections. This collection is unique in the field and now includes sections from the earliest rails to be laid in America down to the most modern.

The two accessions received in water transportation are a finely made model of a modern 3-masted Chinese junk with sampan, loaned by Mrs. Maurice Smellow, and three operating models of early steam steering engines invented by Herbert Wadsworth, the gift of Mrs. Herbert Wadsworth.

To the collections devoted to the development of mechanical and electrical power devices were added several interesting accessions. The Pelton Water Wheel Co. presented five water-wheel buckets, which illustrate the progress in design of the impulse water wheel during the period 1901 to 1912. The successful development of the impulse water wheel started about 1877 with the work of L. A. Pelton, of California, and others in the attempt to utilize efficiently for power purposes the high headwater powers that had been developed for hydraulic mining in the mountains of the West. The invention of the split bucket and the subsequent development of the impulse wheel are purely American achievements not represented before in the collections.

An Atkinson cycle illuminating gas engine was presented by the heirs of Samuel Powel. This type of engine was popular in England during the early days of the internal combustion engine and is the design of J. Atkinson, a well-known pioneer in gas-engine work. The engine presented to the Museum was made in 1889-90, to the order of Samuel Powel for his experimental workshop at Newport, R. I., by Henry Warden, of Philadelphia, licensee of the English inventor. Willys-Overland (Inc.) presented a 6-cylinder, sleeve-valve automobile engine of 1927-28. This engine, which is sectioned and operative, is a valuable exhibition specimen for illustrating the operation of the sleeve-valve automobile engine. To the collection of steam-engine models was added a well-made and accurate model of a marine beam engine of 1888, the gift of Andrew L. Weis. The model is one-twentieth actual size and includes all the details of mechanism and framework of the familiar paddle-wheel

steamboat engine. It has the added value of having been constructed by an engineer on such a boat in 1888. The Pickering Governor Co., at the request of the division, contributed two engine governors of the distinctive Pickering type heretofore lacking in the series of governors in the Museum.

At the request of the National Warm Air Heating Association the Museum has undertaken to preserve a warm-air heater that was originally purchased about 1850 by Washington Irving for Christ Church at Tarrytown-on-Hudson, N. Y. This represents a very early use of central heating of any kind for buildings in the United States. It is an early model of a Richardson and Boynton furnace and was presented to the Museum by the association through the present Richardson & Boynton Co.

Last year the division acquired its first relic of fire-fighting equipment. This year it can report two very valuable accessions in what promises to be a popular field of collection. The United Fire Engine Co., No. 3, of Frederick, Md., presented a perfectly preserved, hand-drawn, steam fire engine of 1876-1878. This engine, made by Clapp & Jones, pioneer steam fire-engine builders of Hudson, N. Y., was one of three exhibited by that company at the Centennial Exhibition at Philadelphia in 1876, where it assisted in winning for the makers the award in the class of piston steam fire engines. It was purchased in 1878 by the United Company after competitive tests with other fire engines of that date, and remained in active service until 1912. Frank A. Wardlaw, jr., of Inspiration, Ariz., presented a model of an Amoskeag steam fire engine of 1873, made by his father, Frank A. Wardlaw, of New York City. The original of the model was a Harp Tank type with a single pump of 500 gallons capacity, designed for small communities with unpaved streets and without water systems, and was made of light construction to permit its being drawn by hand or horses.

The only addition to the electrical collections during the year is a Wagner mica plate electric machine loaned by Fred C. Reed, of the division staff. The machine was used by the father of the donor for its therapeutic value in the practice of medicine. It represents the final development in static electric generators, as well as the last general use to which static electricity was put.

To the collection illustrating the development of timekeeping, the city of Frederick, Md., presented a tower-clock movement of about the year 1791, which is a remarkable example of the early hand-made tower clocks. This clock was purchased by popular subscription by the townspeople of old Frederick Town, installed in the tower of Trinity Chapel of the Evangelical Reformed Church, and subsequently presented to the town. It has continued to be the town

clock until a few years ago, when it was considered dangerous to operate and was replaced by a more modern movement. The old movement is well made with wrought-iron frame and brass wheels; it has a hook and pin escapement and an hour-strike mechanism. The clock is one of a very few known to have been made with a two-seconds-beat pendulum, which is approximately 14 feet in length. Mrs. Daniel Gardner donated, in her large collection that enriched several divisions of the Museum, a group of five early English and American clocks, which supply much needed illustrations of steps in the development of the clock as shown by the collections. The collection of clocks was brought up to date and now includes the electric clocks through the courtesy of the New Haven Clock Co., who presented nine items of electric clocks and clock movements.

An interesting grading transit of about 1854, made by William Würdeman, of Washington, D. C., was added to the collection of surveying instruments by transfer from the War Department. This was used in the construction of the original Washington Aqueduct by Capt. M. C. Meigs, who was later Quartermaster General of the United States Army. John E. Reynolds presented the astronomical notebook and journal kept by Andrew Ellicott from 1797 to 1801. These describe in detail the work involved in the survey of the boundary between the United States and the Spanish possessions in Florida, with descriptions of the use of Ellicott's surveying instruments already in the Museum and many notes of observations made with them. Francis D. Shoemaker gave an original of the "Ellicott" plan of the city of Washington engraved and struck by Thackara & Vallance, of Philadelphia, in 1792. The legend of the map refers to Ellicott and his use of the transit instrument in laying out the streets of the Capital.

The typewriter collection, which is now one of our most complete series depicting the development of a single machine or device, was increased by the acquisition of three early typewriters. Paul Edward Garber, of the division staff, presented a Smith-Premier Typewriter, No. 2, a double-keyboard, nonvisible writing machine. Two Victor typewriters purchased by the Museum before 1900 for office use were put in the collection.

The telegraph collections include several instruments invented and made by James J. Clark, a pioneer maker of electric telegraph instruments, the interest attached to which is increased by the acquisition of the Franklin Institute medal of 1852, which was presented to Clark for his invention of the self-winding telegraph register. The medal and one of the presentation models of the harp register of about 1846-47, also made by Clark, were presented by his daughter, Mrs. W. S. Minnix.

The collection of watchmakers' tools, a few isolated specimens of which have been included in the general tool collections, is very well filled out by the gift by W. H. Samelius of 18 items of watchmakers' equipment. The tools were used by a watchmaker who studied and worked in the shops of many of the best-known watchmakers of central Europe and England and represent the complete equipment of a master watchmaker of the period 1830-1880. They include lathes, wheel-cutting engines, and many special-purpose tools, such as a screw remover and wheel stretcher. Maj. Gen. George O. Squier, United States Army, retired, presented to the Museum a miniature pocketknife, which was prepared in 1931 from alloy steel made by Michael Faraday about 1819-1824. Though the knife is only 1 inch long, it follows exactly the Sheffield cutlery practice for knives of the type.

Textiles, organic chemistry, wood technology, foods, and medicine.—The additions during the year to the collections under the supervision of the curator of textiles numbered 1,749 specimens, divided as follows: Textiles, 253 specimens; organic chemistry, 559; wood technology, 333; foods, 1; history of agriculture, 4; and medicine, 599.

From William Skinner & Sons 16 pure-dye silks were received for exhibition with their contribution of 18 years ago. This firm also donated special silk fabrics manufactured for women's shoes and undergarments, together with articles demonstrating their use.

The cooperation of H. R. Mallinson & Co. (Inc.) continued with the gift of a series of new printed silk fabrics in designs inspired by the George Washington Bicentennial celebration. Pure-dye silk crêpe is the ground for these prints, which include 17 patterns, 3 of them taken from authentic costumes worn by famous personages in early American history and designated as "Martha Washington," "Dolly Madison," and "Elizabeth Monroe."

The Cotton-Textile Institute (Inc.) contributed two series of outstanding cotton fabrics produced by American manufacturers. The first series, brought out for the fall and winter trade of 1931, presents many new weaves and rough textures. The second series, intended for the spring and summer seasons of 1932, emphasizes sheer goods, lace, and net effects. These were selected as the best examples of the year's productions by a committee of experts in fashion, representing five popular periodicals.

The Celanese Corporation of America donated a new series of specimens of Celanese dress materials for inclusion in a group of exhibits representing the more important classes of synthetic fibers.

Fragments of an old drapery material purchased in England about 1781 by a member of the Virginia House of Burgesses were presented to the Museum by Miss Isabelle McCaw Erwin. This

fabric represents one of the most prized of the patriotic copperplate prints of the latter part of the eighteenth century, and is known as "The Allegory of Franklin and Washington." A copy in a modern printed cotton drapery of this old copperplate print was contributed by W. & J. Sloane for exhibition with the original print. Other modern drapery fabrics printed in the "George Washington Bicentennial Commemorative Pattern," depicting important historical events in Washington's life, were donated by Witcombe, McGeachin & Co. (Inc.).

Suggestive of the patriotic fabrics of colonial times is an interesting series of specimens of the early nineteenth century, contributed by Mrs. Daniel Gardner and comprising baskets and miscellaneous textile articles for household and personal use. Interest centers particularly around the old hand-woven coverlets and bedquilts of pieced and appliquéd cotton patchwork, which are receiving wide attention of collectors of colonial American handicraft. Of equal importance are the hand-woven blankets, bed linens made of hand-spun yarns, and a flax wheel upon which the linen yarn was spun. Among the articles for personal use is a noteworthy series of shawls in characteristic weave, including beautiful examples of the India and Paisley types.

Through the continued cooperation of Edgar J. Rollins the collection of implements used in the household textile industries during the colonial period was supplemented by a hand-reel, or niddy-noddy, made before 1800, for winding wool yarn into measured skeins for use as warp in the loom. Mr. Rollins augmented the group representing homespun industries by the gift of a hand-woven wool blanket and a pair of linen pillowcases made from wool and flax raised and spun on the Jacquith estate at Billerica, Mass., during the American Revolution.

Other contributions included: An excellent example of an all-white "stuffed quilt," or counterpane, elaborately quilted in raised patterns by Elizabeth Shaffer in 1817 and presented by her granddaughters, Mrs. U. M. Phillipi, Mrs. Clara J. Shiner, and Miss Emma B. Casebeer; a specimen of huckaback type, hand-woven cotton counterpane used in the family of Charles Cutts, United States Senator from New Hampshire, 1811-1814, an ancestor of the donor, Miss Florence W. Layton; and a linen damask teacloth of classical pattern in the Adam style, from the wedding linen of Priscilla Cutts, a granddaughter of the Rev. Edward Holyoke, president of Harvard University, 1737-1769, and an ancestor of the contributor, Mrs. Ethel Winona Walsh.

Six specimens were added to the collection illustrating the development of the sewing machine. Among these are a trial model in brass of a sewing machine made by Elias Howe, jr., loaned by his

niece, Mrs. Jennie Teel Amee; a framed portrait of Amasa Bemis Howe, the originator of the Howe Sewing Machine Co., and himself an inventor and patentee of a successful sewing machine, the gift of his daughter, Mrs. Cornelia Howe Hawkins; and two bronze medals, one awarded to the Howe Sewing Machine Co., A. B. Howe, president, for the exhibition of sewing machines at the London International Exhibition of 1862, and the other awarded to A. B. Howe by the Paris Universal Exposition of 1867—the gift of his granddaughter, Mrs. W. E. Shoemaker.

To the models of agricultural implements and objects relating to the history of agriculture four additions were made during the year as follows: From Mrs. Frederick E. McCormick-Goodhart an enlarged framed photograph of a painting by Goldsborough Anderson, R. A., of her grandfather, Robert McCormick, the official patent model of a grain binder invented by her father, Leander J. McCormick, and a copy of *Hands Across the Sea*, an autobiography of the donor; and from Frank Hepp a full-sized cutting bar from an early type of McCormick reaper.

Gail Borden's original vacuum pan used in 1853 for evaporating milk was given by the Borden Co. for installation in the section of foods near the milk-condensing plant model. Borden, an American inventor, conceived his idea of preserving milk while a passenger on an immigrant ship in 1851, when the only way milk could be provided on ocean voyages was by carrying cows aboard ships.

The most noteworthy addition to the exhibits of the section of wood technology was a series of 44 framed tree photographs loaned to the Museum by William F. Bucher. While a member of the Wanderlusters and the old Camera Club, Mr. Bucher photographed in their natural settings these outstanding trees, and each photograph is framed in the same kind of wood as the tree represented.

Drake Process (Inc.) continued its interest by contributing 13 articles formed by the Drake process for inclusion or replacement in the exhibit of their products. By this process, containers, toy forms, and models are blown from wood pulp in one operation.

By the exchange of specimens with the Yale University School of Forestry, through Prof. S. J. Record, a set of 116 Liberian woods was received. The woods were all collected with herbarium material by G. Proctor Cooper, their collection having been made possible by Harvey S. Firestone, jr., whose company was clearing timber-lands for rubber plantations in Liberia, West Africa.

Fifty-four microscope mounts of Panama woods, received from the University of Washington College of Forestry, through Ellwood S. Harrar, jr., are also worthy of mention. E. J. Lee continued his cooperation by sending 29 study samples of Hawaiian

woods and one quilted maple board from Oregon, the greater part of these being entirely new to the Museum collection. Mr. Lee also sent samples of Japanese kiwada, American bittersweet, California buckeye, and Cuban tortoise-shell wood. Nineteen study samples of the wood of North China were sent in exchange by the Fan Memorial Institute of Biology, through Prof. Y. Tang. These woods, collected by C. F. Li in Anhwei Province, were likewise heretofore almost wholly unrepresented here.

Eighteen trunk sections of trees felled during grading operations in the grounds of the United States Department of Agriculture were transferred from the division of gardens and grounds of the Bureau of Plant Industry, and represent mainly species that would be very difficult to obtain otherwise in this country. While it is unfortunate that the trees had to be destroyed, the Museum has benefited by the specimens, which will for some time to come furnish duplicates of woods rare in collections.

In the section of organic chemistry the outstanding accession was the contribution by the Bakelite Corporation of a large series of specimens illustrating the production and application of phenol-condensation products, or Bakelite. This exhibit, substituted for an older and less comprehensive one, includes permanently colored products of many kinds, transparent goods of brilliant shades, cold-molded abrasive products, transparent varnish for metals, and flexible varnishes and enamels of high luster and finish constituting some of the latest developments in plastics.

The Russia Cement Co. likewise cooperated in a renovation of their exhibit in the Museum by the donation of 55 specimens, showing stages in the manufacture of animal and vegetable glues and of ink, together with applications of the same.

In the division of medicine the greater part of the material acquired was assigned to the history of medicine and *materia medica* series. The most valuable single object received was a plaster portrait bust of the late Maj. Gen. William Crawford Gorgas, surgeon general of the United States Army during the World War, and an internationally known physician and sanitarian. The bust, which rounds out the collection of personal relics of this famous man, was presented by the sculptor, Mrs. Louise Kidder Sparrow, in memory of Mrs. Gorgas.

Specimens of medical and surgical supplies and equipment used in the United States Navy by Surgeon Lewis Wolfley from 1832 to 1834, and in the United States Army by Lieut. Col. William Irvin Wolfley from 1861 to 1865, were donated by Mrs. Elizabeth F. Wolfley, Mrs. Eleanor Wolfley Bisell, Mrs. Caroline Wolfley Shannon, and Mrs. Elizabeth Wolfley Harmon, through Thomas J.

Shannon. This contribution contains many interesting items not previously represented in the collection. Mrs. Charles duBois contributed a pocket case of surgical instruments used by the late Dr. Jonathan S. Prout while a medical officer of the United States Army with the Twenty-sixth Missouri Infantry from 1862 to 1865.

Additions to the magic series included one silver and four wax ex-votos, received by exchange from the Royal Museum of Art and History, Brussels, Belgium. These were collected in Louvain and Malines in 1930 and 1931 by Dr. Frans M. Olbrechts, who states that ex-votos are still being used by the people of country communities—and even by city people—in Belgium and other parts of Europe. They are offered at certain shrines either to obtain the cure of an ailment or as a thank offering for the cure.

Miss Aida M. Doyle, of the Museum staff, presented a scarificator—an instrument used in the operation of blood letting—formerly owned by her father. This consists of 12 blades set upon two rotary axes, which are operated by a strong spring. The blades being set to the required depth, the instrument is placed upon the skin and the spring released by pressure upon a trigger, whereby 12 shallow incisions are made. An "exhausted cup" then being applied, the desired flow of blood is obtained.

A photograph of a miniature from life of Dr. William Brown, physician-general of the Middle Department of the Continental Army and the author of the first American pharmacopoeia, was received as a gift from Mrs. Bessie W. Gahn, a descendant. Other additions to the history of medicine series were a truss for the treatment of hernia, made from wood with a jackknife and fitted by Dr. A. T. Still, donated by Dr. Thomas J. Howerton, through Dr. Riley D. Moore, and a sphygmomanometer for registering blood pressure, contributed by the W. A. Baum Co. (Inc.).

Noteworthy donations to the collection of *materia medica* consisted of the following: A series of specimens illustrating the history and use of the Chinese drug Ma Huang, and its derivatives, from Eli Lilly & Co. This drug—from a plant of the genus *Ephedra*—has been known to the Chinese for more than 5,000 years, and is used by the Chinese as a heart stimulant, to allay coughs, and to control fevers. Since the comparatively recent isolation of the drug's active principle, the alkaloid ephedrine, and the manufacture of derivatives, the medicine has come into quite extensive use to raise blood pressure and to act as a circulatory, a vasomotor, and a stimulant for the sympathetic nervous system.

An exhibit illustrating the manufacture of medicinal pills and tablets was specially prepared for the Museum by Parke, Davis & Co. With the compound cathartic pill and the compressed tablet of pepsin, bismuth, and charcoal, as types, each progressive step,

such as weighing, mixing, kneading, shaping, polishing, coating, and bottling, is shown in such a manner that the complete processes of pill and tablet making can be easily understood.

Other gifts for the *materia medica* series included specimens of adhesive and medicated plasters from Johnson & Johnson; photographs illustrating the manufacture of gelatin capsules from Eli Lilly & Co., and miscellaneous pharmaceutical preparations from Parke, Davis & Co., E. R. Squibb & Sons, Schieffelin & Co., and Frederick Stearns & Co.

Contributions for the *pharmacy* series included a collection of specimens used by American pharmacists to measure, weigh, and dispense medicines, from Henry Troemner. This material consists of a ball scale, hand scale, general prescription balance, army prescription balance, pocket prescription balance, specific gravity balance, set of metric liquid measures, and examples of unusual types of apothecary, avoirdupois, and metric weights devised to facilitate differentiation between weights of the three systems.

A medicine chest, made about 1804, by Paytherus, Savory & Co., London, England, and brought to the United States by Jan A. Willink, of Amsterdam, Holland, was presented by William C. Baur, the seventh successive owner. This chest and its contents are in an exceptionally good state of preservation and, with its nearly complete set of unique medicine containers, hand scales, unusual weights, mortar and pestle, bolus knife, plaster iron, graduates, and patent medicines, portray much of interest concerning the practice of medicine and pharmacy at the beginning of the nineteenth century.

A copy of the first edition of the *United States Pharmacopoeia*, published in 1820, was obtained as a gift from Dr. F. E. Stewart, who has cooperated with the division since its origin in 1881. Doctor Stewart also presented other material, among which was the Chinese balance used by his grandfather, Dr. Orson Nichoson, said to have been the first physician to practice in Orleans County, N. Y.

Graphic arts.—The permanent collections in the division of graphic arts with its section of photography were increased by 1,001 specimens, of which 980 were received as gifts, 19 as transfers, and 2 acquired otherwise.

Through various members of the family of the late Timothy Cole, one of the greatest wood engravers, the division of graphic arts received the working outfit used by that artist in engraving his blocks. The tools were the gift of Mrs. Timothy Cole. His son, Alphaeus P. Cole, gave a photograph of an oil painting by himself showing his father at work, painted shortly before his death. Mrs. Timothy Cole through another son, Lucius Cole, contributed a large finished block of the "Calmady Children," after

Lawrence, with a proof, as well as the photograph from which it was engraved. The working outfit has been incorporated in the wood-engraving exhibit, where it forms both a technical and a historical attraction.

Mrs. J. L. Gérôme Ferris, another friend of the Museum, continued her generosity by the donation of much valuable material for graphic arts, including some exceptional prints for exhibition and many specimens especially desirable for the study series. The gift included 25 etchings by Fortuny, nearly completing the Museum series of his work in that medium, together with photographs, reproductions, and reference material on that artist. There are also 3 etchings by Rembrandt, 13 by Thomas Moran, 6 by Jules Jacquemart, and lesser numbers by Unger, Rajon, Leopold Flameng, Hervier, Th. Chauvel, A. Legros, and others. There are 45 engravings by American and foreign artists, the most distinguished of the Europeans represented being R. Nanteuil, C. Mellan, Edelinck, Schmidt, Charles, and Henriquez-Dupont; and of the Americans, A. B. Durand and Welmore.

Among 85 original drawings in oil, water color, pen and ink, and lead pencil, by various artists, are a series by Stephen J. Ferris (59) and J. L. Gérôme Ferris (11), including many portraits of the Ferris and Moran families. Other artists represented are Christian Schussele, the teacher of Stephen J. Ferris, Robert Blum, F. O. C. Darley, and Percy Moran.

Mrs. Ferris's donation contained also a series of artistic relics of famous artists, including Gilbert Stuart's palette; John Trumbull's traveling paint box, which contains dry colors in papers and bottles, part of a bottle of linseed oil, a palette and some small brushes; Thomas Sully's studio table, used for holding brushes and a palette, and a photograph of Sully in his studio which shows that particular table; a Sully palette, and one that belonged to Thomas Moran, as well as four brushes used by him.

Supplementing the Ferris collection was a gift from Clyde O. DeLand, of 187 photographs of American and foreign artists of 50 to 75 years ago, a collection made by Stephen J. Ferris and given to Mr. DeLand by J. L. G. Ferris. This series contains likenesses of many famous artists, including Thomas Sully, F. O. C. Darley, Edwin A. Abbey, Thomas LeClear, Edward Moran, Mr. and Mrs. Thomas Moran, W. H. Powell, Rembrandt Peale, Samuel F. B. Morse, Daniel Huntington, A. B. Durand, Frederick Church, Christian Schussele, and George Inness.

For many years the Treasury Department has had deposited in the division specimens of the mechanical transfer process of duplicating intaglio steel plates. In recent years the plates have been duplicated by electrotyping, and the Bureau of Engraving and Printing this year substituted for older material three plates which

show the present method. The newness of the process developed by the Bureau of Engraving and Printing and the Bureau of Standards relates to the final coating of chromium 0.0002 inch thick. This metal is very hard and being deposited bright insures a surface which will polish readily and greatly increases the wearing qualities.

For some years the division has had an exhibition of "Brule-gravure," or burnt print, a method invented and still used by John W. Robbins. This year Mr. Robbins contributed 26 specimens, which included the first plate he made by this method, also a plate with print by another process which he supposed he had invented, but which was in use 170 years ago, called "Lavis." This method, by which the bare plate is etched in tone by various strengths of acid, is little used, aquatint having taken its place. The Pond-Ekberg Co., through H. W. Pond, contributed the original engraved wood block by Asa Cheffetz of "Ramshackle Barn," and a block made from it in rubber, which the company calls "Re-Zilio." The print from the rubber block is very attractive.

Living American artists contributing examples of their prints to the collections included C. Allen Sherwin, an etching; C. A. Seward, a lithograph; James Bann, a wood engraving; and Eugene Higgins, an etching. Dr. Marvin A. Custis donated an etching by Philip Kappel, and the Smithsonian Institution deposited an etching by Herman A. Webster, being the print distributed to its associate members by the Society of American Etchers.

Examples of printing received during the year consisted of a book and pamphlet printed by B. Franklin and D. Hall, and a modern book from the press of William Edwin Rudge (Inc.). The Franklin-Hall imprints were: "A JOURNAL, or, Historical Account, of the Life, Travels, and Christian Experiences, of that Antient, Faithful Servant of Jesus Christ, Thomas Chalkley; Who departed this Life in the Island of Tortola, the fourth Day of the Ninth Month, 1741" and "An EXTRACT from a TREATISE by William Law, M. A., called the SPIRIT of PRAYER: or, the SOUL rising out the VANITY of TIME, into the RICHES of ETERNITY." These works are interesting because they bear the name of B. Franklin. The volume "Here, There, and Everywhere," by Edgar S. Bliss, published by William Edwin Rudge (Inc.), is a fine example of printing, for which the Museum is indebted to the Worthy Paper Co.

The section of photography received some notable acquisitions during the year. C. Francis Jenkins continued his cooperation by adding to the motion-picture series five specimens showing machines used by him in television and broadcasting weather maps. Haywood Howell donated an Al Vista Panoramic Camera made by the Multiscopa and Film Co. D. I. Bushnell, jr., gave a No. 1 Eastman Kodak enlarging Camera, size 6½ by 8½ inches, a very early model.

Frank V. Chambers, editor and publisher of *The Camera*, presented a very old siphon print washer and a "Novotank" plate developing tank, invented and manufactured by Gustave Dietz, the inventor of the multispeed shutter. An "Igento" plate developing tank, made by Burke & James, was the gift of John U. Perkins, of the Smithsonian Institution. A lens for a 4-by-5-inch Ray "C" box camera was sent in by Vincent B. Harris.

F. E. Ives continued his interest in the collection by sending in four specimens of his polychrome-process color photographs. This is a two-negative process and somewhat closely approximates natural colors. F. B. Bristow donated three pictorial prints: *Lines of Age*, *Summer Skies*, and *Golden Autumn*. C. W. Miller gave a pictorial print, *The Home Coming*, a Fesson carbon print, the first on this material in the collection.

In the large donation from Mrs. Daniel Gardner, which enriched several divisions of the Museum, were 23 daguerreotypes, ambrotypes, and tintypes. Miss M. W. Seville, of the Smithsonian Institution, gave 6 tintypes and 36 cartes de visite, and C. L. Maury a carte de visite containing a view of the United States Capitol.

DeLancey Gill, of the Smithsonian staff, contributed 50 stereoscopic views taken in 1871 to 1874 by the Wheeler Survey West of the One-hundredth Meridian and an albumen print of an English landscape.

The Royal Photographic Society of Great Britain donated a bound portfolio, which the society has recently published, of gravure reproductions of six prints from the Tyng collection; and the Eastman Kodak Co. sent 20 pictorial photographs representing the principal awards in the recent Eastman's Kodak international competition, of value as showing the best in current amateur photography.

History.—A total of 6,056 objects, including 4,625 philatelic specimens, were added to the collections in the division of history during the year, the increment probably surpassing in intrinsic value any annual increase in recent years.

Paintings illustrating social life and notable historical events form one of the most important types of historical museum materials both for display and study purposes. The Museum was enriched this year by a series of such paintings through the generosity of Mrs. J. L. Gérôme Ferris, who presented to the Museum the well-known collection of historical paintings executed by her husband, the late J. L. Gérôme Ferris, of Philadelphia. This series of 71 pictures represents the life work of this eminent American artist and constitutes a unique record of American history in pictorial form, illustrating notable events of American history during the period from the discovery of America to that of the World

War. A number deal directly with the career of George Washington, touching both his private and his public life. Some idea of the historical value of the series may be had from the following titles, which are typical of the series as a whole: The Fleet of Columbus, Signing the Mayflower Compact, The Fall of New Amsterdam, Drafting the Declaration of Independence, The News of Yorktown, Washington's Inauguration, The Battle of Lake Erie, The Gettysburg Speech, and The Meeting of Grant and Lee. The acquisition of this series of paintings by the National Museum confers a great benefit upon the hundreds of thousands of patriotic Americans who visit the Museum each year.

Other additions of note for the pictorial collections included a portrait of Maj. Gen. Charles J. Bailey, of the American Expeditionary Forces, painted by Joseph Cummings Chase and donated by the personnel of the Eighty-first Division, A. E. F., through Sergt. Paul Barry and Corp'l. Paul Corrigan, of the 321st Infantry. Mr. Chase, the eminent American portrait artist, with the authority of the War Department, went overseas and during 1918 and 1919 made a comprehensive series of portraits of officers and men of the American Expeditionary Forces. A committee to acquire for the Nation the Chase collection of A. E. F. portraits was early organized, and from it the Museum has for some years had an increasing number of these valuable historical portraits, the individual portraits being presented by individual donors or by organizations interested in the completion of this undertaking. The series here now numbers 48 paintings and, as installed in proximity to objects relating to the World War, enhances interest in the collection.

Through the Joint Committee on the Library, the Congress of the United States loaned to the Museum a Washington memorial window, a stained-glass panel by Maria Herndl representing George Washington on horseback conferring with Lafayette and von Steuben. Mrs. R. S. Wortley donated a portrait sketch by George Piexotto of her father, Rear Admiral Winfield Scott Schley, United States Navy.

A number of objects of special interest were added to the antiquarian collections. A topaz necklace, which was presented to Mrs. James Monroe in Paris by her husband, James Monroe, when he was United States minister to France, was donated to the Museum as an addition to the costumes collection by Mrs. Eleanore Daughaday Hertle through her husband, Louis Hertle. This necklace was installed on the figure representing Mrs. Monroe in the series of White House dresses.

A gold badge of the Kappa Kappa Gamma Fraternity, of the type worn by Mrs. Rutherford B. Hayes during the presidential administration of her husband, 1877-1881, was presented to the Museum by

the Kappa Kappa Gamma Fraternity, through Mrs. Thomas L. Stokes, jr. This badge was pinned on the dress of Mrs. Hayes in the series of White House dresses.

A large collection of chinaware, glassware, silverware, kitchen utensils, furniture, pictures, jewelry, samplers, and miscellaneous household objects of the early part of the nineteenth century was presented by Mrs. Daniel Gardner. This acquisition forms a most desirable and valuable addition to the antiquarian series.

A mahogany cradle owned during the latter part of the eighteenth century by Col. William A. Washington of the Continental Army, the brother of Gen. George Washington, was donated by Peyton Magruder. A silver tea service of the early part of the nineteenth century was presented by Miss Harriet A. Keen.

Other objects of personal interest received included a number of relics of Bishop Matthew Simpson of the Methodist Episcopal Church and his wife, Mrs. Ellen H. Simpson, donated by the Misses Simpson.

Among interesting additions to the personal military collections were two handsome swords owned by the Hon. George S. Batcheller, one worn by him during the Civil War as lieutenant colonel of the One Hundred and Fifteenth New York Volunteers, and the other as inspector general of the National Guard of that State. These swords with other objects were presented by Miss Katherine Batcheller for addition to the collection of relics of Mr. Batcheller previously presented by her to the Museum. Three swords owned during the Civil War by Lieut. Col. James M. Green, Forty-eighth New York Volunteers, were donated by Miss Georgianna Ring Green.

A large and interesting collection of military relics of Maj. Gen. Winfield Scott Hancock, United States Army, which was lent to the Museum by Hancock Dorr in 1919, was donated to the Museum by Mr. Dorr during the year. This collection includes service and presentation swords, uniforms, insignia, and miscellaneous relics.

The collection of military uniforms of the World War period was augmented by a series of military uniforms and equipment of the type used by enlisted men of the Portuguese Army during that period, contributed by the Government of Portugal, through its minister in Washington.

A number of interesting additions were made to the numismatic collections. The American Numismatic Association increased its already large and interesting loan collection in the Museum by the addition of 85 specimens. From the United States Treasury Department were received 18 examples of the United States bronze, nickel, silver, and gold coins struck in 1931, and 132 ancient and modern coins. A collection of Kruger coins of the South African (Transvaal) Republic was received as a gift from Onderdewgaard von Blommestein.

Interesting medals were received from several sources. The gold medal struck in 1932 by the National Academy of Design in honor of Samuel Finley Breese Morse, its first president, and presented by the society to his son, William Goodrich Morse, reached the Smithsonian as a gift from the latter through his daughter, Miss Leila Livingston Morse. Two copies of the medal commemorating the centennial anniversary of the invention of the reaper were donated by the International Harvester Co., and two bronze copies of the gold medal awarded by the Congress of the United States to Maj. Walter Reed, United States Army, and his associates "who gave to man control of yellow fever" were transferred to the Museum by the Treasury Department.

During the year the philatelic collection was increased by 4,625 specimens, of which 4,127 were transferred to the Museum from the United States Post Office Department, being chiefly the sets of new issues distributed by the International Bureau of the Universal Postal Union, Berne, Switzerland. R. Wedmore, an English collector of stamps, as a result of his visit to the Museum, sent three early unused Prussian stamps previously represented in the exhibition series by used stamps. And 495 postage stamps new to the national collections were selected for the Museum, in accordance with his wishes, from the extensive stamp collection of the late Dr. Frank Wigglesworth Clarke, who for many years was an honorary member of the scientific staff of the Museum.

INSTALLATION AND PRESERVATION OF COLLECTIONS

Engineering.—Practically the whole of the aircraft collection was reinstalled in the renovated Aircraft Building, which included the new installation of a "frieze" of aircraft propellers on the walls of the building. Although the full-size coal-mine exhibit under construction in the coal-industries court was not completed, by a rearrangement of the complementary exhibits the hall was opened to the public. This did much to improve the general appearance of the section of mineral technology. Another rather unusual installation, although of temporary character, was that of the commemorative exhibit of the *John Bull* locomotive centenary celebration. This involved laying track, raising the locomotive to permit the wheels to turn and supplying it with compressed air, and constructing replicas of several monuments commemorating the locomotive's first run.

In addition, the preparators accomplished much work in preparing for exhibition a great many specimens formerly in the collections but not exhibited. They succeeded too in greatly improving the appearance of the watercraft collection, besides maintaining the ever-demanding operating exhibits of the division.

Textiles, foods, organic chemistry, wood technology, and medicine.—Twenty-four new installations and five reinstallations of specimens were made in the textile halls during the year, including the semiannual display of new cotton fabrics from the Cotton-Textile Institute (Inc.) and the Bicentennial series of printed silks contributed by H. R. Mallinson & Co. (Inc.).

Acquisition of new material in the organic chemistry section necessitated the rearrangement of a number of existing exhibits, the most important of which being that on the production and uses of Bakelite.

A complete and pleasing rearrangement of the collections in the section of wood technology was effected during the year and new material added to many of the exhibits including the display of the new Bucher collection of framed tree photographs.

In the division of medicine one of the most important additions was an exhibit to illustrate the history and use of the Chinese drug Ma Huang and its derivatives.

Graphic arts.—No new permanent exhibits were installed but additions to and improvements were made in the wood engraving and the bank-note engraving exhibits.

Thirteen special temporary loan exhibitions of etching, block print, dry point, aquatint, and pictorial photography were held during the year. Nine of these loan exhibitions relating to graphic arts were held in the Smithsonian Building, as follows:

October 5 to November 1, 1931: 51 etchings and dry points by George T. Plowman.

November 2 to November 29, 1931: 59 lithographs, etchings, and block prints, by C. A. Seward.

November 30, 1931, to January 3, 1932: 40 block prints, black and white and in color, by Ernest W. Watson and his wife Eva Auld Watson.

January 4 to January 31, 1932: 45 aquatints in color, dry points, and etchings, by Miss Beatrice S. Levy.

February 1 to February 28, 1932: 41 etchings, aquatints, and soft ground prints, by Joseph C. Claghorn.

February 29 to March 27, 1932: 66 etchings and aquatints, by H. Luthmann, through the courtesy of Mrs. Bertha E. Jaques.

March 28 to April 24, 1932: 50 etchings by Eugene Higgins.

April 25 to May 22, 1932: 30 etchings by Miss Elizabeth E. Keefer.

April 25 to May 22, 1932: 24 dry points by Carl Rungius.

The four temporary loan exhibitions relating to pictorial photography were held in the photographic gallery in the Arts and Industries Building, as follows:

July 1 to July 31, 1931: 68 pictorial photographs of Manhattan Borough, by members of the Camera Club, of New York City.

October 1 to November 30, 1931: 50 bromoil transfers by A. W. Hill, of Edinburgh, Scotland.

December 15, 1931, to January 31, 1932: Memorial exhibition of the work of Joseph Petrocelli, consisting of 53 bromoils, bromoil transfers, and resino-tipias, loaned by Mrs. Petrocelli.

March 1 to March 31, 1932: 64 pictorial photographs, by members of the Telephone Camera Club, assembled by the Associated Telephone Camera Clubs and shown first in New York City.

Another temporary exhibition, on display in the photographic gallery from August 1 to September 30, was from the permanent possessions of the Museum and comprised the Stephen H. Tyng Foundation collection of pictorial photographs.

History.—Three new installations of major importance were completed during the year: The exhibition of the Star Spangled Banner in a special case, the dimensions of which permit the entire design of the union of this important flag to be seen; the removal of the naval collections from the rotunda of the Natural History Building to the northwest court of the Arts and Industries Building; and the installation of the J. L. Gérôme Ferris collection of American historical paintings in the costumes hall.

In connection with the erection of the new exhibition case for the Star Spangled Banner along the west wall of the north hall, all the remaining cases along this wall as well as the south wall were completely rebuilt so as to exhibit properly the large quantity of antiquarian material formerly installed here. An entrance was made, too, through the west wall to permit access to the northwest court, which formerly had but one entrance, that from the northwest range. The installation of the naval collection in the northwest court involved the removal of the entire musical instrument collection from the court as well as the philatelic collection, the latter being transferred to the west end of the west hall. The musical instruments were placed in the second floor gallery of the southeast range, in space vacated by naval exhibits.

After careful consideration it was decided that the only suitable space for the valuable collection of the Ferris historical paintings was along the south side of the costumes hall, where they are exhibited on built-in screens forming three alcoves. This installation necessitated the breaking up of the costumes unit, which had been entirely assembled in this hall, the larger items of the collection of costumes remaining in the hall with the balance including the Richard Mansfield theatrical costume collection installed along the north side of the west hall gallery.

In connection with the George Washington Bicentennial, the Washington relics in the Museum were brought together in the north hall. The four floor cases of such relics heretofore displayed there were augmented by the installation in an adjacent wall case of the Continental uniform worn by Washington when he resigned his commission as commander in chief of the Continental Army, and his sword, mess kit, and tents used in the Revolution.

INVESTIGATION AND RESEARCH

The staff of the department of arts and industries carried on investigations involving the study of records and equipment of industrialists, directed toward details of the history of invention and industrial and engineering progress. This is a necessary and continuous activity to obtain not only the requisite knowledge to present accurate, intelligent exhibits and to complete the type collections but also to satisfy the hundreds of written inquiries received from the Federal departments, students, private and industrial research workers, patent attorneys, and laymen.

The preparation of three descriptive catalogues of the collections in the division of engineering went ahead, the manuscript of that for the mechanical collections being substantially completed. A revised edition of the handbook on aviation was issued during the year.

In the division of history, investigations concerned practically all subjects within the scope of its collections, with particular emphasis on swords, coins, military uniforms, postage stamps, and colonial costumes. The monograph by the curator on the swords in the National Museum was in press at the close of the year.

DISTRIBUTION AND EXCHANGE OF SPECIMENS

The distributions from the department of arts and industries and the division of history during the year aggregated 6,733 specimens, of which 481 were gifts in aid of education, 221 were exchanges for which material has or will be received, and 3,835 were loans for educational or research purposes. Also during this period 2,196 specimens that had temporarily been in the Museum were returned to their owners.

NUMBER OF SPECIMENS UNDER DEPARTMENT AND DIVISION

The number of specimens in the department of arts and industries and the division of history on June 30, 1932, was 517,439, assigned as follows:

Engineering	14,708
Textiles	13,128
Wood technology	8,033
Organic chemistry	19,399
Foods	1,103
Agricultural history (estimated)	950
Medicine	16,384
Graphic arts, including photography	37,559
Loeb collection of chemical types	1,277
History	404,898
Total	517,439

ACCESSIONS TO THE COLLECTIONS DURING THE FISCAL YEAR 1931-32

[EXCEPT WHEN OTHERWISE INDICATED THE SPECIMENS WERE PRESENTED, OR WERE
TRANSFERRED IN ACCORDANCE WITH LAW BY BUREAUS OF THE GOVERNMENT]

ABOTT, W. C., Washington, D. C.: 1,800 beetles of family Chrysomelidae from New England and Virginia (119284).

ABOTT, Dr. W. L., North East, Md.: Anthropological and biological material collected in Haiti by Herbert W. Krieger during fiscal year 1930-31 (113146).

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pa.: 24 African birds (117995); 8 specimens of plants from Florida (119576, exchange); (through Dr. Henry W. Fowler) 14 shrimps from Brazil (119665).

ADAMS, Mrs. ELEANORE F., Washington, D. C.: English china tea set of early part of nineteenth century (118069).

AELLEN, Prof. PAUL, Basel, Switzerland: 51 specimens of plants from Europe (118357). Exchange.

AERO CLUB, Pittsburgh, Pa.: 3 photostat pictures of Calbraith P. Rodgers, first transcontinental flier, 1911 (119804).

AGRICULTURE, DEPARTMENT OF, Trinidad, British West Indies (through R. O. Williams): 1 specimen of plant (116404). Exchange.

AGRICULTURE, U. S. DEPARTMENT OF:

Bureau of Animal Industry: (Through Dr. Maurice C. Hall) 13 specimens, 5 species, of fresh-water mollusks from Salt Lake City, Utah, and 7 specimens of land snail from southern Idaho, collected by Dr. L. E. Swanson (118930, 119216); 4 lots, 22 specimens, of fresh-water mollusks from Utah (119761); 65 specimens of fresh-water snail from Louisiana (119775); 9 photographs of

domestic birds for illustrating feather exhibit (119777).

Bureau of Biological Survey: 3 squirrel skins with skulls from northern Sweden (115664); 1 set, 11 eggs, of blue-winged teal (116376); 4 amphipods and 1 shrimp from duck stomachs (116424); 17 specimens of amphipods and 4 isopods (116507, 118895); skin of a young musk-ox from Greenland (117244); 1 specimen of fish collected in May, 1931, by E. C. Cushing, near Golovin, Alaska (117245); 5 amphipods, fragments of 5 pycnogonids, and 1 vial of copepods (117318); (through F. M. Uhler) a collection of 36 Mexican amphibians made by the Departamento de Exploración Biológica, República Mexicana (117356); 6 specimens of plants from Eastern United States, collected by W. L. McAtee (117399); specimen of fresh-water mussel clamped shut on toe of green-winged teal, which was unable to tear loose and so died (117413); 19 specimens of plants from Florida, collected by A. H. Howell (117474); 1 egg of Sierra rosy finch (118141); 6 ducks in the flesh (118718); 1,210 specimens of insects (840 Hymenoptera and 370 Coleoptera) (119007); 489 mammals transferred and entered in Museum catalogue as Nos. 249990-250474, inclusive, new series, between July 1, 1931, and June 30, 1932 (119799).

Bureau of Chemistry and Soils: Samples of wyomingite from

AGRICULTURE, U. S. DEPARTMENT OF—
Continued.

Zirkel Mesa, near Superior, Wyo., greensand from New Brunswick area of New Jersey, and Georgia shale from Bartow County, Ga. (118564).

Bureau of Dairy Industry: 25 specimens of dairy products and derived chemicals (119778).

Bureau of Entomology: 13 isopods and 1 lizard collected by Dr. W. M. Mann in Spain and Portugal in 1924 (115417); 2 beetles, paratype and allotype (115826); 22 specimens, 3 species, of land mollusks from Trinidad, British West Indies, received from H. Caraciolo, Trinidad (115968); 15 specimens of land snail from Reading, Pa. (116423); (through W. W. Yothers) 1 corn-snake, 1 scarlet snake, and 1 young Florida king-snake, all collected in Orlando, Fla. (117431, 118219, 118377); (through Dayton Stoner) 3 lizards from Florida (117492); 15 alcoholic specimens of birds from Southeastern United States (117807); 601 specimens of flies collected in China by H. A. Jaynes (118033, 119310); 7 flies collected in Alaska by E. C. Cushing, in 1931 (118915); 16,370 specimens of miscellaneous insects, kept out of material received during year (119995).

Bureau of Plant Industry: 30 specimens of plants from Western United States (115426); (through Dr. Frederick V. Coville) 1 specimen of plant from California; 1 specimen of plant from Alaska; 225 specimens of plants chiefly from Utah and Nevada, collected by I. Tidestrom; 50 specimens of plants collected in France by I. Tidestrom; 42 specimens of plants collected in Idaho by H. J. Rust; 1 specimen of plant from Arizona (115519, 118356, 118521, 118709, 118936, 119664); (through Dr. T. H. Kearney) 4 fragmentary spec-

imens of plants from California; 824 specimens of plants from Arizona; 26 specimens of plants from Lower California; 14 specimens of plants from Mexico; 54 specimens of plants from Arizona and Lower California (115668, 117338, 117411, 117491, 118016, 118726, 118900, 119320, 119517, 119589); (through W. W. Eggleston) 2,465 specimens of plants chiefly from New Mexico; 900 specimens of plants chiefly from Western United States, all collected by W. W. Eggleston (115703, 116028, 117222); (through Paul G. Russell) 5 specimens of plants from Panama; 53 specimens of plants collected by Erlanson and Souviron in Mexico; 1 specimen of plant from Mexico; 2 specimens of plants from Russia; 5 specimens of plants (116137, 116973, 117420, 118242, 118721, 118937, 119566); (through H. C. Skeels) 185 specimens of plants from equatorial Africa, chiefly the Belgian Congo, collected by H. Humbert (116138); (through Knowles A. Ryerson) 1,825 specimens of plants collected by Dorsett and Morse in eastern Asia (116327); (through Dr. S. F. Blake) 86 specimens of plants; 12 specimens of plants collected by V. L. Cory in Texas; 70 specimens of plants from Oklahoma; specimen of plant from Washington (117203, 117205, 118379, 118574, 118758, 118878); (through A. C. Dillman) 1 specimen of plant (117212); (through Dr. A. S. Hitchcock) 1 specimen of plant from France; 1 specimen of plant from Alabama (117758, 118017); (through I. Tidestrom) 1 specimen of fern from Alaska (118578); trunk sections of 18 trees collected by William N. Watkins and Edward A. Avery in the grounds of Department of Agriculture, in Washington, D. C., September 17, 1931, to February 11, 1932, from trees felled during grading operations (119272).

AGRICULTURE, U. S. DEPARTMENT OF—
Continued.

Hawaii Agricultural Experiment Station, Honolulu, Hawaii: 3 specimens of plants (117634).

Plant Quarantine and Control Administration: 4 specimens, 2 species, of land shells from New Providence, Bahamas, and 6 isopods (115398); 20 isopods and 3 specimens of land mollusks (116197, 116392, 118888); 3 isopods and 1 mollusk specimen from Arizona (116727); 1 specimen of land mollusk from Honduras, and 11 isopods (117500); 1 fragmentary isopod from Philippines, 1 gecko from bananas from Jamaica, and 2 specimens of land slug from Germany and New Zealand (117901); 2 isopods in logs from Australia, intercepted at San Francisco, and 1 specimen of slug from Ireland (118734).

Office of the Solicitor: 31 specimens of mollusks from a sand ridge between Harney Lake and Lake Malheur, 40-50 feet above Harney Lake, Harney County, Oreg., the ridge reported as stratified, with layers of shells thickly interspersed, and "supposed to be a wind drift," collected by W. A. Petree, November, 1931 (117201).

ALASKA AGRICULTURAL COLLEGE AND SCHOOL OF MINES, College, Alaska: 4 human skulls from Nunivak Island and Hooper Bay, Alaska, and a bottle of insects from St. Lawrence Island (115423); skeletal material from various sites in Alaska (117480).

ALDRICH, F. R., Balboa, Calif.: 1 specimen of fish from the coast of Orange County, Calif. (117068).

ALLEN, FRED M., Gastonia, N. C.: Specimen of anthophyllite from Corundum Hill, Macon County, N. C. (118600).

D'ALTE, Viscount. (See under Government of Portugal.)

AMAN, Miss KATHERINE PAUL, Habana, Cuba: 3 specimens of mollusks from Cuba (116224).

AMEE, Mrs. JENNIE TEEL, Cambridge, Mass.: Trial model of sewing machine made by Elias Howe, jr., about 1845, and turned over to his niece, Mrs. Amee, by Mrs. Austin C. Wellington, daughter of George Fisher, Howe's original partner (115220). Loan.

AMEEL, DONALD. (See under University of Michigan.)

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.: 2 casts of a skull of a fossil reptile (114943); 2 skins and 1₁ ₂ alcoholic specimen of African wood swallow (116677); 148 birds from Polynesia (117666). Exchange.

AMERICAN NUMISMATIC ASSOCIATION, New York, N. Y.: Coins of Austria, Egypt, France, Germany, Great Britain, and Hejaz, struck 1927-1931; coins of Austria, Bulgaria, Czechoslovakia, Egypt, France, Germany, Italy, and Luxemburg; coins of Belgium, Brazil, Chile, Costa Rica, Czechoslovakia, France, Germany, Greece, Italy, Lithuania, Mexico, Netherlands, Poland, Rumania, and Switzerland, struck 1901-1929; coins of Czechoslovakia, France, San Marino, and Switzerland, struck 1920, 1931; coins of Austria, Afghanistan, Belgium, Bulgaria, Danzig, Hejaz, Iraq, Panama, and Portugal, struck 1925-1932 (115592, 116732, 117348, 118134, 119580). 85 specimens. Loan.

AMERICAN OPTICAL CO., Southbridge, Mass. (through Albert A. Munsch): 6 pairs of protection goggles for coal-mine exhibit (115676).

AMERICAN SCHOOL OF PREHISTORIC RESEARCH IN EUROPE, New Haven, Conn.: Collection of 479 archeological specimens from cave of Mugharet-el-Wad, near Athlit, Palestine (115831).

AMORY, COPLEY, Washington, D. C.: 3 skins with skeletons and 1 odd skull of fur seal (119171).

AMOY, UNIVERSITY OF, Amoy, China (through Dr. T. Y. Chen): 16 echinoderms from Amoy (115226).

ANDERSON, ALFRED L., Moscow, Idaho: Samples of anthophyllite from near Kamiah, Idaho (117074).

ANSOVIN, FERNANDO, Vibora-Habana, Cuba; 21 specimens of moths and butterflies from Cuba (115395).

APPLETON, Mrs. R. E., Easton, Md.: Dress of latter part of nineteenth century (116465).

ARBELAEZ, DR. ENRIQUE PEREZ. (See under Colombia, Ministerio de Industrias.)

ARCHER, W. A., Washington, D. C.: Ethnological specimens, insects, reptiles, 1 shell, and a specimen of sowbug, collected by the donor in Quibdo, Intendencia del Choco, Colombia (115380); 648 specimens of plants from Intendencia del Choco, Colombia (115421); 2 silver necklaces of the Choco Indians of the upper Atrato River Valley, Colombia (115974, loan).

ARCHERS CO., Pinehurst, N. C.: 15 pieces of archery tackle, including 1 unfinished and 2 finished bows, 2 Norway pine slats, 1 beefwood slat, 2 beefwood footings, and 3 unfinished and 4 finished arrows (116385).

ASCHEMEIER, C. R., Washington, D. C.: 1 African gray parrot (117530, exchange); 10 lots, 30 specimens, of tree snails showing variations, collected on Key Largo, Fla., July, 1930 (117663).

ASHLEY, THOMAS H., Oakland, Calif.: 1 specimen of plant (116396).

ASHTON, RUDOLPH. (See under Boyd Richard Reed.)

AUDANT, DR. ANDRE, Port-au-Prince, Haiti: 4 specimens of mollusks from Haiti (119533).

AUGUSTANA COLLEGE, Rock Island, Ill.: A specimen of Devonian sponge from Chautauqua County, N. Y. (119211). Exchange.

AUSTRALASIAN ANTARCTIC EXPEDITION, Adelaide, Australia: 126 comatulids (96456).

AUSTRALIA, BUREAU OF SUGAR EXPERIMENT STATIONS, Merina (through E. Jarvis): 13 flies from Australia (117907).

AUSTRALIAN MUSEUM, Sydney, Australia: 7 specimens of minerals from New South Wales (115829). Exchange.

AUTOGIRO CO. OF AMERICA. (See under Harold F. Pitcairn.)

AVERY, EDWARD A. (See under Smithsonian Institution, National Museum.)

BAERG, W. J., Fayetteville, Ark., 2 parasitic copepods from goldfish (116232).

BAILEY, HAROLD H., Miami, Fla.: 9 bird skins from tropical America, and 1 fox squirrel from Florida (111724).

BAILEY, DR. L. H., Ithaca, N. Y.: Specimen of plant from Canal Zone (116029); 12 specimens of ferns from Panama; 5 specimens of plants (116141, 116601, exchange).

BAIRD, R. O., Joliet, Ill.: 1 type specimen of plant (117064).

BAKELITE CORPORATION, Bloomfield, N. J.: Series of specimens showing manufacture of Bakelite resin and important types of molded products made by its use (116481).

BAKER, F. H., Richmond, Victoria, Australia: 3 insects from Australia (117647); 21 specimens, 2 species, of land and marine mollusks from Australia (118603).

BAKER, DR. H. B., Philadelphia, Pa.: 344 specimens, 42 species, of land and fresh-water mollusks from United States (119830).

BAKHTIN, LEON, Brooklyn, N. Y.: Russian bronze 1-kopeck piece, struck in 1931 (119787).

BALL, W. HOWARD, Washington, D. C.: 1 crayfish from Northwest Branch, Anacostia River, Avenel, Prince Georges County, Md., collected May 2, 1931, by donor (115961); approximately 50 amphipods taken at Point Lookout, Md., by donor (116030, 116497); 3 birds (116252); 3 semi-palmated sandpipers (116388); 1

BALL, W. HOWARD—Continued.
wood thrush (116492); skeleton of purple grackle from Washington, D. C. (117981); 1 specimen of yellow-breasted chat (119789).

BALZER, AUGUST I., Beaumont, Tex.: 3 toads from Texas (119185).

BANCROFT, DR. B. B., Cambridge, England: 9 specimens of brachiopods from Ordovician of Wales (116586). Exchange.

BANKHEAD, Hon. W. B., Washington, D. C.: 1 specimen of plant (117207).

BANN, JAMES, Cincinnati, Ohio: A wood engraving of Mrs. Bann (118117).

BARBER, HERBERT S., Washington, D. C.: 3 eggs of monk paroquet (119398, 119548).

BARBOUR, DR. THOMAS, Cambridge, Mass. (through Dr. E. W. Nelson): Mounted head of deer from Big Pine Key, Fla. (116685); 1 deer skull with antlers and 1 deer antlers with fragment of skull from Big Pine Key, Fla. (118244). (See also under Department of Commerce, Bureau of Fisheries.)

BARKER, JOHN S., Washington, D. C.: 2 specimens of plants from District of Columbia (116678, 119405); 1 specimen of plant (119796).

BARLOW, Miss CATHERINE B., Washington, D. C.: Chinese crêpe embroidered shawl 70 years old (119588); scarf of cotton net ornamented by an application of small pieces of metal foil arranged in geometric patterns (119792).

BARNES, GEORGE D., Dayton, Tenn.: 2 lots of potsherds, 1 from a village site in Rhea County, Tenn., and the other from Pine Island, Ala. (117861).

BARNES, R. M., Lacon, Ill.: 3 butterflies (109211); 3 specimens of Lepidoptera (119294).

BARRY, JAMES, Washington, D. C.: A model, one-fiftieth size, of Keystone bomber, a type now used by the Army Air Corps (119835). Loan.

BARRY, Sergt. PAUL. (See under Eighty-first Division, A. E. F.).

BARTON, Mrs. DOROTHY SMITH, Portsmouth, N. H.: 1 sponge (115822).

BARTRAM, EDWIN B., Bushkill, Pa.: 14 specimens of mosses from Mexico (119183). Exchange.

BARTSCH, DR. PAUL, Washington, D. C.: A collection of mollusks, of crustaceans, annelids, echinoderms, bryozoans, and coelenterates, collected at and about Tortugas, Fla., during summer of 1931 (115894); 1 specimen of fish from Camp Roosevelt, Chesapeake Bay (116239).

BASSLER, H., New York, N. Y.: 14 specimens of plants from Peru (Tessmann collection) (118143).

BASSLER, DR. R. S. (See under Smithsonian Institution, National Museum.)

BATCHELLER, Miss KATHERINE, Saratoga Springs, N. Y.: Military and other relics of George S. Batcheller, jurist and soldier, 1836–1908, and a lace shawl and mantle worn about 1840 by Mrs. James Cook (117577).

BAUM CO. (INC.), W. A., New York, N. Y.: 1 sphygmomanometer for registering blood pressure (115818).

BAUR, WILLIAM C., Norwalk, Conn.: A fully equipped medicine chest, comprising 48 specimens of the period of 1800 (118923).

BAYLIFF, WILLIAM H., Annapolis, Md.: 2 amphipods and 14 isopods (115683); 4 shrimps and 4 lobster larvae (118132).

BAYLY, ALEXANDER SHEPHERD. (See under Mrs. Delia Bayly Orem.)

BEAN, BARTON A., Washington, D. C.: 2 specimens of fishes (116238); 1 complete skeleton of a shad obtained at the O Street market in June, 1932, and prepared by E. D. Reid (119785).

BEAN, ROBERT C., Solomons Island, Md.: 7 jellyfishes and 7 crabs collected by donor at Solomons Island, Md. (115666, 115846).

BEAUFORT, DR. L. F. DE. (See under Zoologisch Museum, Amsterdam.)

BECKER, R. B., Gainesville, Fla.: Fish teeth, bones, and shells from near Gainesville, Fla. (117178).

BECKWITH, FRANK, Delta, Utah: 2 slabs of limestone with rare forms of *Agnosti* (118770).

BEGOUEN, Count HENRI, Toulouse, France (through J. Townsend Russell): 11 casts of ancient European engravings and impressions (117494); cast of a human skull showing the Toulousain deformation (117889).

BELL, Miss SONTAG, ESTATE OF, Elberton, Ga. (through Mrs. Bessie DuBose): Pair of silver shoe buckles owned during the colonial period by Christopher Clark (115776).

BENEDICT, Brother A., El Paso, Tex.: 105 specimens of plants from Texas (116209).

BENEDICT, J. E., jr., Linden, Md.: 1 crayfish from a lake in New Hampshire (115936); specimen of fish from Valley Lee, Tall Timbers, Md. (116240); specimen of fern from North Carolina (117410); 15 specimens, 2 species, of marine shells from Potomac River, St. Marys County, Md. (119719).

BENESH, BERNARD, North Chicago, Ill.: 2 beetles from Queen Charlotte Islands (118121).

BENJAMIN, Dr. MARCUS, Washington, D. C.: Large basket made by the Attacapa Indians of Louisiana (115956, exchange); 2-lobed wicker basket made along the lines of English folk art by an Englishman in Jamaica (115975). (See also under Miss Oro Joe Hemphill.)

BENN, JAMES, Washington, D. C.: 6 specimens of eels from Oxon Cove, Md. (116304). (See also under Smithsonian Institution, National Museum.)

BEQUAERT, Dr. JOSEPH, Boston, Mass.: 10 specimens of flies collected in Guatemala and representing 2 new species (118005).

BERNAUER, Prof., Berlin, Germany: Crystals of the mineral mellite from Saxony (118748). Exchange.

BESSON, E. JOHN, Washington, D. C.: 1 kingfisher (118761); 1 ruby-throated hummingbird from Maryland (119397).

BETSCH, CHRIS, Russian Mission, Alaska: Skeletal material from Russian Mission, Alaska (117219).

BINGHAM OCEANOGRAPHIC FOUNDATION, Peabody Museum of Natural History, Yale University, New Haven, Conn. (through A. E. Parr): 1 specimen of fish (116593). Exchange.

BISELL, Mrs. ELEANOR WOLFLEY. (See under Mrs. Elizabeth F. Wolfley.)

BISHOP MUSEUM, BERNICE P., Honolulu, Hawaii: 3 flies from Hawaii (115155).

BLAIN, Prof. WALTER L. (See under Southeastern Teachers College.)

BLAKE, Dr. S. F., Washington, D. C.: 58 specimens of plants from United States (116599, exchange); 150 specimens of plants from Western United States (119755). (See also under Joseph Ewan; University of Michigan; and Department of Agriculture, Bureau of Plant Industry.)

BLAND, Judge OSCAR E. (See under Jack Johnson.)

BLOMMESTEIN, ONDERDEWGAARD VON, Cape Town, South Africa (through State Department): Bronze, silver, and gold coins of the South African Republic, struck 1894-1896 (114654).

BLUE, Mrs. H. NEWTON, Washington, D. C.: Oil painting showing Gen. Ulysses S. Grant and 26 other Union generals on horseback, painted in 1866 by Hansen Balling (114920). Loan.

BOIES, L. C., Phoenix, Ariz.: Archeological and skeletal remains collected from a cave in Superstition Mountains by Oakley Jordan, Mesa, Ariz. (119662).

BOND, Mrs. MAY O., Washington, D. C.: A double-ended wrench formerly used on the locomotive *Stourbridge Lion* at Honesdale, Pa., 1829 (116405).

BORDEN Co., New York, N. Y.: Original vacuum pan used by Gail Borden

BORDEN CO.—Continued.

in 1853 for condensing milk by his process of "producing concentrated milk in vacuo," which was awarded a patent by U. S. Patent Office on August 19, 1856 (119188).

BORDEN, RICHARD. (See under W. G. Sheldon.)

BORLAND, Dr. W. A., Juneau Alaska: A series of ivory points from Togiak River, Alaska (117333).

Boss, Norman H. (See under Smithsonian Institution, National Museum.)

BOTANIC INSTITUTE OF CHARLES UNIVERSITY, Prague, Czechoslovakia: 100 specimens of plants (117339). Exchange.

BOTANICAL GARDEN AND MUSEUM, University of Cluj, Cluj, Rumania: 100 specimens of plants (117340). Exchange.

BOTANICAL GARDEN OF THE U. S. S. R., Academy of Sciences, Leningrad, U. S. S. R.: 218 specimens of plants from Mexico and Central America (115512). Exchange.

BOTANISCHES INSTITUT DER UNIVERSITÄT, Heidelberg, Germany (through Prof. Hugo Gluck): 39 specimens of plants (117809). Exchange.

BOTTIMER, L. J., Haddon Heights, N. J.: 2 specimens of plants from Paradise Key, Fla. (118545).

BÖVING, Dr. ADAM G., Washington, D. C.: 2 specimens of beetle larvae, very rare, received by donor from Dr. Fritz von Emden, Dresden, Germany (117202).

BOWERMON, G. W. R., Las Vegas, N. Mex.: A sandstone concretion simulating bone structure from Las Vegas, N. Mex. (115726).

BOWLING, LESLIE, Austin, Tex.: A small collection of fossil shells from Catahoula formation, Fayette County, Tex. (106448).

BOYCE THOMPSON SOUTHWESTERN ARBORETUM, Superior, Ariz.: 1 specimen of plant (117988).

BRACELIN, Mrs. H. P. (See under Mrs. Ynes Mexia.)

BRADENTON CYCLE Co., Bradenton, Fla.: 1 specimen of a basket star (115179).

BRADY, L. F. (See under Museum of Northern Arizona.)

BRADY, MAURICE K., Washington, D. C.: 30 salamanders and 1 crayfish from Gates County, N. C. (116241); 338 reptiles and amphibians, 2 fishes, 2 ticks, and 1 vial of parasitic worms collected in Florida (118634).

BRIGHT, JOHN, Pittsburgh, Pa.: 15 specimens of plants (117827).

BRISTOW, F. B., Salina, Kans.: 3 pictorial prints, "Lines of Age," "Golden Autumn," and "Summer Skies" (119044).

BRITISH GOVERNMENT:

British Museum (Natural History), London, England: About 400 lots of English Jurassic Mollusca; a collection of recent Bryozoa; 18 samples of marine deposits from the *Challenger* expedition collection; 18 beetles (114967, 117047, 117489, 117736, exchange); 3 specimens of flies (117884); 10 specimens of sawflies representing 9 species new to the National Museum collections (119774).

Imperial Forestry Institute, Oxford, England (through Prof. J. Burtt Davy): 115 specimens of plants from South Africa (115815); 59 specimens of plants, chiefly from West Africa (118591). Exchange.

Imperial Institute of Entomology, London, England: 3 flies (116217, 116674).

Royal Botanic Gardens, Kew, Surrey, England: 47 photographs of plant type specimens (118260); 59 specimens of plants collected in British Guiana by N. Y. Sandwith (119291). Exchange.

BRONAUG, CLAUDE (Boss), Afton, Okla.: 8 specimens of the fossil Ceratopia from Fulton County, Okla. (117776).

BROSSEAU, Mrs. ALFRED, Washington, D. C. (through Mrs. R. G. Hoes): Dress worn by Mrs. Alfred Brosseau

BROSSEAU, MRS. ALFRED—Continued.
when president general of the National Society of the Daughters of the American Revolution, 1926-29 (119535).

BROWN, DR. R. W., Washington, D. C.: Wood samples of devils-walking-stick and rosebay rhododendron from Pennsylvania (119219).

BROWN, W. L., Washington, D. C.: 1 specimen of cow-nosed ray collected at Cobb Island, Md., August 21, 1931 (117075). (See also under E. D. Reid.)

BROWNBACK, HENRY L., Norristown, Pa.: A French Renault aircraft engine, of about 1916 (119803).

BROWNE, FRED R., Ashburn, Ga.: 1 bat from Georgia (118927).

BRUCE, DONALD, Washington, D. C.: A model, one twenty-fourth actual size, of a Waco Straight Wing airplane, 1931, a three-place tractor bi-plane for commercial use (116705).

BRUCE, DOUGLAS, Washington, D. C.: A model, one-fourteenth size, of the Travelair *Mystery S* airplane, recently used by Capt. Frank Hawks in establishing transcontinental and intercity records (117102).

BRUNER, Prof. S. C., Santiago, Cuba: 3 insects (119198); 42 beetles, including 10 types, 1 paratype, and 3 species new to the collections (119716, exchange).

BUCHER, WILLIAM F., Washington, D. C.: Wood samples of Monterey cypress (115642); 44 framed photographs of trees, the wood forming the frame being of the same species as the tree photographed (115767, loan); 3 small trunk sections of the woods of European hornbeam, purple beech, and sweetbay (119717).

BUCHHOLZ, Prof. JOHN T., Urbana, Ill.: 1 specimen of plant from Arkansas (117471).

BUCHTIEN, DR. OTTO, La Paz, Bolivia: 81 specimens of plants from Bolivia (118368, 118384).

BUCKEYE ALUMINUM Co., Wooster, Ohio (through Albert A. Munsch): An aluminum lunch bucket for the coal-mine exhibit (115675).

BUDLONG, ROBERT, Washington, D. C.: Approximately 50 mysids and 3 amphipods taken at Cape Henry, Va., by donor (116206).

BULLARD, C., Cambridge, Mass.: 2 specimens of plants from New Hampshire (116707).

BULLOCK, Prof. D. S., Angol, Chile: 1,487 miscellaneous insects and 82 specimens of land, fresh-water, and marine shells from Chile and Argentina (116399); 8 specimens of insects from Angol, Chile (116402); 6 eggs, 2 of yellow-shouldered blackbird and 4 of cowbird, from Chile (118919).

BUNKER, CHARLES D., Lawrence, Kans.: 4 toads from a camp south of Tucson, Ariz. (119193).

BURCH, Hon. T. G. (See under J. I. White.)

BURGER, CHARLES R., Boulder, Colo.: Examples of cerite from near Jamestown, Colo. (118569).

BURK, Miss ELLEN I., Shabunda, Belgian Congo, Africa: Ethnological specimens from Belgian Congo (115847).

BURKENROAD, MARTIN, Washington, D. C.: 1 crab finger from Calvert formation, Plum Point, Md. (119748).

BURT, DR. CHARLES E., Winfield, Kans.: A collection of 68 reptiles and amphibians from Central and Southern United States (115649); 2 salamanders, 15 frogs, 7 lizards, and 3 fishes (118729); 9 turtles from Kansas and Oklahoma (118862). (See also under Smithsonian Institution, National Museum.)

BUSHNELL, D. I., jr., University, Va.: Crystals of limonite pseudomorphous after pyrite from near Charlottesville, Va. (116843); A No. 1 Kodak enlarging camera (118883); a model of a fish trap, bow, bark quiver, and a small lot (5) of arrows (119271).

CALDERON, Dr. S. (See under Laboratorios de la Dirección General de Agricultura.)

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, Calif.: (Through John Thomas Howell) 1 specimen of plant from California (118367, exchange); 374 specimens of plants mainly from Mexico (118696, exchange); (through J. R. Slevin) 3 amphibians from Guatemala (118777).

CALIFORNIA AGRICULTURAL COMMISSIONER, Los Angeles, Calif.: 1 sawfly from California (118579).

CALIFORNIA, UNIVERSITY OF, Berkeley, Calif.: 94 specimens of plants mainly from Tonga (116850, exchange); 6 flies from the Sierras (118135); (through Dr. H. F. Copeland) 4 specimens of ferns (118717, exchange); 200 specimens of plants from California (119718, exchange).

CALIFORNIA, UNIVERSITY OF, at Los Angeles, Calif.: 124 specimens of plants from California (116698). Exchange.

CAMERA CLUB, New York, N. Y.: 68 pictorial prints of Manhattan Borough, New York City, for special exhibition during July, 1931 (115591). Loan.

CAMPBELL, BERRY, Monrovia, Calif.: 1 frog new to the collection (115817).

CAMPBELL, W. H., Boise, Idaho: Fossil fish, mollusks, and plant remains (116906).

CANADIAN GOVERNMENT:

Biological Board of Canada, Toronto: 44 lots, 169 specimens, of marine mollusks from Hudson Bay, etc. (115172).

CANFIELD FUND, Smithsonian Institution: A large exhibition specimen of smithsonite from New Mexico (117113); 2 specimens of galena on dolomite from Golden Rod No. 4 Mine, Picher, Okla., and 4 specimens of barite from Tex Mine, Hockerville, Okla. (118015); 1 specimen of chalcopyrite on dolomite (118035); 44 rough zircons from Ceylon (118711).

CANU, Dr. F., Lebrun, Versailles, France: 100 specimens of recent Bryozoa from southeast coast of France (116469).

CARACCIOLI, Dr. H., Trinidad, British West Indies: 1 bat and 1 rat from Trinidad (117511).

CAREORUNDUM Co., Niagara Falls, N. Y.: A group of models of machines for manufacturing abrasives, with samples of raw materials and abrasive products (118902).

CARIBBEAN BIOLOGICAL LABORATORIES (INC.), Biloxi, Miss.: A collection of marine invertebrates and 2 lots of helminth specimens from Biloxi, Miss. (116079); 2 frogs from Kiangsu, China (116192); 6 tadpoles from Mississippi (116889, exchange); 26 turtles from Mississippi (117357).

CARNEGIE INSTITUTION OF WASHINGTON, Washington, D. C. (through Dr. W. H. Longley): 182 specimens of fishes from south of Tortugas, Fla., collected by Doctor Longley in August, 1931 (116598).

CARNEGIE MUSEUM, Pittsburgh, Pa.: A fore foot and a hind foot of a fossil rhinoceros; skeleton and odd bones of the "Chow," an extinct bird from Bermuda (94140, 117209, exchange); a fossil crab claw from Bermuda (117657); a booklet written by the first transcontinental flyer, Calbraith P. Rodgers, 1911, 2 photographs of his airplane as now preserved in the Carnegie Museum, and a map of his route (119802).

CARR, A. T., Trinidad, British West Indies: 15 specimens of plants (algae) from Trinidad (118512).

CARUSO, A., Washington, D. C.: Augite crystals from Mount Rossi, Sicily (116605).

CASEBEER, Miss EMMA B. (See under Mrs. U. M. Philippi.)

CATHOLIC UNIVERSITY OF AMERICA, Washington, D. C. (through Father Hugh O'Neill): 130 specimens of plants from Florida and Brazil (116417); 143 specimens of plants from Brazil (119015). Exchange.

CAWSTON, Dr. GORDON, Durban, Natal, South Africa: 12 specimens of fresh-water limpet from South Africa (116617).

CELANESE CORPORATION OF AMERICA, New York, N. Y.: 14 specimens of Celanese fabrics, representing plain and printed goods in various weave structures (116326).

CHASE, E. P., San Pedro, Calif.: 4 crabs (116398); a collection of amphipods, isopods, shrimps, porcellanids, crabs, hermits, sipunculids, and mollusks (117675); 3 crabs, 3 shrimps, 2 hermits, 30 amphipods, 12 isopods, 1 marine annelid, 6 leeches, holothurians, insect larvae (118772).

CHAMBERLAIN, E. B. (See under Charleston Museum.)

CHAMBERLAIN FUND, FRANCES LEA, Smithsonian Institution: 2 pendants of amber, 3 of precious serpentine, and a bracelet of "red" jade (116135); 2 engraved moonstones and 1 Siberian topaz (117330); 9 opals, 2 pieces of Aztec jade, and 2 cut stones of obsidian (117805); 1 carved coral figure and 1 carved malachite vase (118257); 6,000 specimens of fresh-water snails collected in western part of United States by Dr. and Mrs. L. Sinitsin (119831).

CHAMBERS, FRANK V., Philadelphia, Pa.; 1 "Novotank" plate developing tank and 1 siphon print washer (116408).

CHAMBERS, M. B., Clinton, Miss.: 69 specimens of plants from Gambell, St. Lawrence Island, Alaska (118255).

CHAMPION PORCELAIN Co., Detroit Mich.: Examples of dumortierite from mines of the Champion Spark Plug Co. near Oreana, Pershing County, Nev. (118682); 2 large specimens and 6 hand samples of andalusite from Mono County, Calif. (119726).

CHAPIN, Dr. E. A., Washington, D. C.: 2 specimens of pollucite from Hebron Me., analyzed material (119290).

CHARLESTON MUSEUM, Charleston, S. C.: (Through E. B. Chamberlain) 2 specimens of nematodes from the stomach of a porpoise (115216); (through Dr. Charles W. Johnson) 2 specimens of fossil shells, including 1 cotype, from the Cooper River, near Charleston, S. C. (115814).

CHASE (JOSEPH CUMMINGS) COLLECTION OF A. E. F. PORTRAITS, COMMITTEE TO ACQUIRE FOR THE NATION THE, New York, N. Y.: 47 oil portraits of officers and men of the American Expeditionary Forces in France, painted by Joseph Cummings Chase (117218).

CHASE, Mrs. SUSAN BROWN, Washington, D. C.: Gold snuff box and gold medal presented to Maj. Gen. Jacob Brown, United States Army, in recognition of his services during the War of 1812 (116682).

CHASE, THEODORE L., Washington, D. C.: A collection of photographs illustrating racing automobiles, drivers, and interesting events in their history (117894); 18 illustrations of first transcontinental flight made by Calbraith P. Rodgers in 1911 (119764).

CHEN, Dr. T. Y. (See under University of Amoy.)

CHICAGO, UNIVERSITY OF, Chicago, Ill.: 2 specimens of flies (117747).

CHILDRESS, CARROLL, Washington, D. C.: Photograph of a "Chinese Leper" (117478).

CHILE EXPLORATION Co., Chuquicamata, Chile: 8 specimens of copper ores from Chuquicamata, Chile (117536).

CHRIST, J. H., Sandpoint, Idaho: 32 specimens of plants from Idaho (117341, 118576).

CINCINNATI SOCIETY OF NATURAL HISTORY, Cincinnati, Ohio: Type and 2 paratypes of a new species of salamander from North Carolina (115773); (through Ralph Dury) 1 salamander (118724).

CLAGHORN, JOSEPH C., Cabin John, Md.: 41 etchings, aquatints, and soft ground prints for special exhibition,

CLAGHORN, JOSEPH C.—Continued.
February 1 to 28, 1932 (118146).
Loan.

CLANTON, HARRY A., Charlotte, N. C.: 4 examples of the type of pottery turned out by donor under the name "Nanco" ware (117181).

CLAPP, WILLIAM F., Boston, Mass.: 2 crabs from Massachusetts Bay and Georges Bank (119732).

CLARK, AUSTIN H., Washington, D. C.: 1 specimen of rayless daisy from the vicinity of Washington (115427); nest and 5 eggs of a vesper sparrow (116717); 12 specimens of butterflies from New Zealand (117352).

CLARK, B. PRESTON, Boston, Mass.: 16 moths from Africa (118587).

CLARK, Dr. F. C., Santa Barbara, Calif.: Fossil Bryozoa from Pliocene at Santa Barbara, Calif., and recent Bryozoa from California coast (118138); 2 packages of Bryozoa from vicinity of Santa Barbara, Calif. (119160, exchange).

CLARKE, Dr. FRANK W., ESTATE OF, Chevy Chase, D. C. (through Miss Mildred Clarke): Postage stamps of United States and foreign countries issued 1897-1930, 495 specimens (115557); the Wilde Gold Medal, Manchester (England) Literary and Philosophical Society, awarded to F. W. Clarke on the occasion of the Dalton Centenary, 1930 (115834).

CLARKE, Miss MILDRED. (See under Estate of Dr. Frank W. Clarke.)

CLAYTON, Dr. H. H., Canton, Mass.: 3 lenses made from quartz crystal presented by Col. W. A. Roebling (115392).

CLENCH, Dr. WILLIAM J. (See under Harvard University, Museum of Comparative Zoölogy.)

CLEVELAND, Mrs. GERTRUDE S., Quinebaug, Conn.: An old California saddle decorated in tooled leather, with horsehair cinch (118412).

COATES, DAN, Dawson, Yukon: Half a skull of an extinct musk-ox (116387).

COBUN, W. C., Morgantown, W. Va. (through Dr. Walter Hough): A fossil nut (115841).

COCHRAN, Miss DORIS M., Washington, D. C.: Approximately 200 amphipods, 100 isopods, 50 shrimps collected by the donor at Cobb Island, Md. (115430); 14 medusae from Chesapeake Beach, Md. (115521); 25 shrimps from Solomons Island, Md. (115590); 1 colonial ascidian and 3 isopods from Crisfield, Md. (116496).

COCKERELL, Prof. T. D. A., Boulder, Colo.: 36 specimens of miscellaneous insects, including cotypes of 2 bees (115422); 16 specimens, 4 species, of land, fresh-water, and marine shells, including type of one and paratypes of another species, from New Caledonia (115651); 23 insects representing 18 species, 2 of which are represented by types (118787).

COFFIN, Prof. R. D., Fort Collins, Colo. (through Dr. John B. Reeside): 200 specimens of Upper Cretaceous invertebrates from two localities in northeastern Colorado (118575). Exchange.

COHN & Co., H. C., Rochester, N. Y.; A series of 54 specimens showing the "Evolution of Men's Neckwear," covering the period 1609-1931, and 23 natural-finish walnut installation pedestals (116212). Loan.

COLBURN, BURNHAM S., Biltmore, N. C.: Archeological and skeletal remains from sites in North Carolina and Tennessee, collected in September, 1931, by F. M. Setzler, and 1 dog skull from Green Mountain, N. C. (115558); 9 lots of minerals from localities in North Carolina and Virginia (119449).

COLCORD, WILLARD ALLEN, Takoma Park, Md.: 1 mourning dove (115765).

COLE, ALPHAEUS P., New York, N. Y.: Photograph of an oil painting by the donor of his father, Timothy Cole, the well-known American wood engraver (115770).

COLE, FRANK R., Whittier, Calif.: 6 specimens of flies (117495).

COLE, LUCIUS. (See under Mrs. Timothy Cole.)

COLE, Mrs. TIMOTHY, Poughkeepsie, N. Y. (through Lucius Cole): Timothy Cole's wood-engraving tools, comprising 53 specimens (117510); a wood block by Timothy Cole of "The Calmady Children" after Lawrence, the retouched photograph from which it was engraved, and a print from the block (118747).

COLLIN, J. E., Newmarket, England: 8 specimens of flies (116466); 30 flies (118250, exchange).

COLLOM, Mrs. W. B., Payson, Ariz.: 4 specimens of plants from Arizona (119356, 119584).

COLOMBIA, MINISTERIO DE INDUSTRIAS, Bogota: (Through Dr. Enrique Perez Arbelaez) 105 specimens of plants from Colombia (115663, 116421); 40 specimens of plants from Colombia (116067). Exchange.

COLORADO MUSEUM OF NATURAL HISTORY, Denver, Colo.: Fossil ulna of a bird (woodpecker) from the Devil's Gulch beds, Lower Pliocene, near Ainsworth, Nebr. (101294); skins with skulls of 2 South American black howlers (117051, exchange).

COLUMBIA UNIVERSITY, New York, N. Y.: 750 specimens of invertebrate fossils (117243). Exchange.

COMMERCE, U. S. DEPARTMENT OF:

Aeronautics Branch: Rudder from the De Haviland Airplane N-1, first airplane licensed by Department of Commerce, and plane and engine logs from same machine (115582).

Bureau of Fisheries: (Through Dr. Thomas Barbour) a collection of stomatopods taken by the *Albatross* in southern and eastern Pacific Ocean and Hawaiian Islands, 1903-4 (107676); 13 sea urchins and starfishes from Pearl and Hermes reef, Hawaiian Islands, collected by Dr. Paul S. Galtsoff in July and August, 1930 (115655); (through Dr. F. W. Weymouth) 10 callianassas and 1 crab from Errol Island, south end of the Chandeleur Group, east of the mouth of the Mississippi (115665); a collection of approximately 100 specimens of stomatopods gathered by Bureau of Fisheries steamer *Fish Hawk* in Puerto Rico (116305); 156 specimens of fishes and a few invertebrates and mollusks collected in Maine, Labrador, and elsewhere by W. C. Kendall (116382); 404 specimens of fresh-water fishes collected in Costa Rica by A. Alfaro (116610); (through Alan C. Taft, Stanford University, Calif.) 20 specimens of amphipods from Hot Creek, Inyo County, Calif. (116728); a collection of miscellaneous materials, comprising sponges, echinoderms, fishes, plants, and mollusks collected by Dr. Paul S. Galtsoff at Pearl and Hermes reef, Hawaiian Islands, in August, 1930, and also a blue print showing localities (117224); collection of corals from the Hawaiian Islands (117469); 3 sponges (117516); 3 specimens of marine shells from the lower Rappahannock River, Va. (118382); 68 isopods, 150 amphipods, 25 copepods, and 5 flatworms (118586); 24 specimens of fishes from South Dakota and Georgia (119178).

COMPANIA MINERA DE PLOMO, El Paso, Tex.: 9 cases of mineral and ore samples (116899).

CONE, J. F. G., Corona, Calif.: Insect (116725).

CONGRESS OF THE UNITED STATES, Washington, D. C. (through the Joint Committee on the Library): Washington memorial window (119148). Loan.

CONNAWAY, CASS, New York, N. Y.: Bronze portrait medallet of Gen. John J. Pershing (117452).

COOK, Lieut. Commander S. S., Port-au-Prince, Haiti; (Through Dr. Paul Richmond) 10 specimens of fishes

COOK, Lieut. Commander S. S.—Contd. (116505); 22 specimens of shells from Morne La Selle Range; a frog, lizard, centipede, and earthworm, all from Haiti (118596).

COOPER, Dr. G. ARTHUR, Washington, D. C.: Approximately 2,500 specimens of Devonian fossils from New York State (116983).

COOPER, WILL J., Hauula, T. H. (through Mrs. C. D. Walcott): 1 specimen of plant (fungus) from Hawaii (117211).

COPELAND, DR. H. F. (See under University of California.)

CORBETT, JAMES, Kodiak Island, Alaska: Skeletal remains from Chiefs Point, Uyak Bay, Kodiak Island, Alaska (117334).

CORNELL UNIVERSITY, Ithaca, N. Y.: 2 specimens of brachiopods from the Tertiary of Patagonia (119026); 190 brachiopods from the Carboniferous of Brazil (119564). Exchange.

CORRIGAN, Corp'l. PAUL. (See under Eighty-first Division, A. E. F.)

COTA, F. M., San Diego, Calif.: 8 specimens of plants from California (118364).

COTTON-TEXTILE INSTITUTE (INC.), New York, N. Y.: 29 specimens of cotton fabrics produced by American manufacturers for fall and winter of 1931 (117100); 36 specimens of cotton fabrics produced by American manufacturers for spring and summer of 1932 (119150).

COVILLE, DR. FREDERICK V. (See under Department of Agriculture, Bureau of Plant Industry.)

COWLES, ERNEST, Grandview, Wash.: Artifacts from a grave on Blalock Island, Columbia River, 2 miles below Paterson, Benton County, Wash. (117672).

CRAIG, S. R., Cincinnati, Ohio (through F. L. Hess): A specimen of pitch-blende from Great Bear Lake, Mackenzie River district, Northwest Territories, Canada (117902).

CRATTY, R. I. (See under Iowa State College.)

RAVEN, Miss E. EDITH, Philadelphia, Pa.: Pistol used by Joseph Jefferson in the character of Bob Acres in Sheridan's *The Rivals* (118048).

CREASER, EDWIN P., Ann Arbor, Mich.: 50 amphipods taken by the donor in Current River, Mo. (116226). (See also under University of Michigan.)

CROCKER, Mrs. N. E., Washington, D. C.: 1 Wilson's thrush in the flesh (119200).

CROOK, Miss MARY E., Washington, D. C.: Luster-ware pitcher, creamer, and mug (117087).

CROSBY, E. W., Sheffield, Ala.: Shell gouge found on the Tennessee River at Sheffield, Ala., by the donor (115143).

CURTIN, Miss LEONORA F., Washington, D. C. (through John P. Harrington): 115 specimens of plants from Morocco (114306).

CUSHING, EMORY C., Washington, D. C.: 21 specimens of insects from Golovin, Alaska (116900).

CUSTIS, DR. MARVIN A., Washington, D. C.: 1 etching, *The Hay Boat*, Ipswich, Mass., by Philip Kappel (117533).

DALY FUND, Smithsonian Institution: 76 specimens of African birds representing forms new to the Museum collections (115404, 116975, 117083, 118107); 89 African birds (115657, 116299, 118565); 2 birds, Vanga shrikes (115945); 2 specimens of birds, Field's kestrel (118918); 4 birds from Somaliland, new to the Museum (119663).

DAMESYN, F. F., Baltimore, Md.: Silver medal commemorating the restoration of the Kingdom of Poland by Alexander I, Emperor of Russia in 1815 (115943).

DAMMERS, Commander C. M., Riverside, Calif.: (Through Dr. William Schaus) 8 specimens of butterflies (115901); 1,000 specimens of moths and butterflies from California (118239).

DAMPF, DR. ALFONS, San Jacinto, Mexico, D. F.: 6 specimens of flies (116604).

DANIEL, H., Colombia: 14 insects, 13 beetles and 1 neuropteron, from Colombia (116260); 27 specimens of miscellaneous insects from Antioquia, Colombia, and 4 specimens, 4 species, of land and marine shells from Colombia and Europe (117646).

DANSKE ARKTISKE STATION, Disko, Greenland: 422 specimens of plants from Greenland (115662). Exchange.

DARLING, CYRUS, Worcester, Mass.: 5 specimens of ferns (116306).

DA ROCHA, Prof. DIAS, Ceara, Brazil: 38 flies from Brazil (118027).

DAVY, Dr. J. BURTT. (See under British Government, Imperial Forestry Institute.)

DAWSON, CHARLES W., Corpus Christi, Tex.: Egg capsules of left-handed conch from Texas (119287).

DEANE, Dr. F. G. W., Barbados, British West Indies: 3 shrimps from Barbados (117418).

DEICHMANN, Dr. ELISABETH, Cambridge, Mass.: 8 lots, approximately 46 specimens of crabs (117906); 3 vials of crabs from Bermuda (118498).

DELAND, CLYDE O., Philadelphia, Pa.: 187 photographs of American and foreign artists, collected by Stephen J. Ferris (119805).

DEMAREE, Prof. DELZIE, Little Rock, Ark.: 579 specimens of plants from Arkansas (117400); 83 specimens of plants (118128).

DENLEY, C. F., Silver Spring, Md.: 2 young pheasants (119525); 2 Reeves's pheasants, 1 silver pheasant, and 1 Bell's pheasant (119547).

DENNIS, L., Irwin, Idaho: 1 spider (116675).

DEPUE, Mrs. A. J., Chevy Chase, Md.: A flying squirrel from Chevy Chase, Md. (117455).

DERNEDDE, Prof. K., Hanover, Germany: 6 skins of hummingbirds representing forms new to the Museum (115272); 15 birds (116203). Exchange.

DEZENDORF, EDWIN, Austin, Tex.: Minerals and building stones from Texas (117888).

DILLMAN, A. C. (See under Department of Agriculture, Bureau of Plant Industry.)

DOBBIN, FRANK, Shushan, N. Y.: 6 specimens of plants from Vermont (115378); 16 specimens of plants from New York (118508).

DODGE, WILLIAM DE LEFTWICH, New York, N. Y.: Model of a combined airplane and helicopter, made and flown by the donor in 1900-1901 (115908).

DOLAN, JOSEPH P., Woonsocket, R. I.: 10-keyed B-flat bugle played by donor's brother, James F. Dolan, with Barnum and Bailey circus during season of 1884 (117154).

DORR, HANCOCK, Boston, Mass.: Dress and service swords, canes, military uniforms and accessories, and miscellaneous relics owned by Maj. Gen. Winfield Scott Hancock, United States Army (115588).

DORSEY, Miss ELLA LORAINE, Washington, D. C.: 1 large kava bowl from Hawaii (113436).

DOUGLASS, Dr. A. E., Tucson, Ariz.: Astronomical and surveying instruments used by Andrew Ellicott, and 3 mounted pages from old instruction book; all the objects except the pages were deposited in the Museum by Doctor Douglass on January 26, 1899, and are now presented (116914).

DOYLE, Miss AIDA M., Washington, D. C.: 1 scarificator used by donor's father, S. S. Doyle (118000).

DRAKE, Prof. CARL J., Ames, Iowa: 15 specimens of insects (118488).

DRAKE PROCESS (INC.), Cleveland, Ohio: 13 articles formed from wood pulp by Drake process (118524).

DRUSHEL, Prof. J. A., New York, N. Y.: 138 specimens of plants (116786, 117637).

DRYDEN, A. L., Bryn Mawr, Pa.: Scapula of a whale from Calvert Cliffs, Md. (115812). (See also under Dr. Remington Kellogg.)

DUBOIS, Mrs. CHARLES, Fishkill, N. Y.: 1 case of surgical instruments used by the late Dr. Jonathan S. Prout

DUBOIS, Mrs. CHARLES—Continued.
while a medical officer of the Twenty-sixth Missouri Infantry, 1862-1865 (116253).

DUBOSE, Mrs. BESSIE. (See under Estate of Miss Sontag Bell.)

DUNBAR, Dr. CARL O. (See under Yale University, Peabody Museum of Natural History.)

DUNN, L. H. (See under Gorgas Memorial Laboratory.)

DUPONT, EUGENE, Greenville, Del.: 2 mounted specimens of red grouse from "Glen," just outside of Innerleithen, Peeblesshire, Scotland (117264).

DURY, RALPH. (See under Cincinnati Society of Natural History.)

DUVAL, HUGH H., Bastrop, Tex.: Package of seeds from Texas (118742).

DWIGHT, ROYAL D. (See under James B. Lund.)

DYER, Mrs. FRANCIS J., San Francisco, Calif.: Collection of basketry and pottery (29 specimens) of North American Indians, formerly a loan and now presented (117092).

EASTERN MABELITE CORPORATION, New York, N. Y.: Sample of crude mineral from Comanche County, Okla., from which a pigment is developed (118752).

EASTMAN KODAK Co., Rochester, N. Y. (through Col. O. N. Solbert): 20 pictorial photographs, representing the principal awards of the recent Eastman's "Kodak International Competition" (119528).

EATON, E. H., Geneva, N. Y.: 1 specimen of fern (115504).

ÉCOLE SUPERIEURE D'AGRICULTURE, Hanoi, Tongking, Indo-China (through Prof. A. Petelot): 138 specimens of plants from Indo-China (116856). Exchange.

EDGERTON, JAMES C., Washington, D. C.: Relics of the pioneer official air-mail service, 1918, of which the donor was a pilot and later an official, which comprises a flying coat and helmet, log book of air-mail plane 38274, 3 report sheets, and a photograph (115428). Loan.

EDISON STORAGE BATTERY Co., Orange N. J. (through Albert A. Munsch): 4 Edison safety hat lamps with cords and battery boxes for coal-mine exhibit (115674).

EDMONDSON, Dr. C. H., Honolulu, Hawaii: 1 specimen of oyster from Hawaii (116235).

EDWARDS, S. C., Colton, Calif.: 5 sandstone concretions from near Signal Mountain, southern border of California (116227).

EGGLESTON, W. W. (See under Department of Agriculture, Bureau of Plant Industry.)

EGYPTIAN TIE AND TIMBER Co., St. Louis, Mo. (through Albert A. Munsch): Mine timbers and ties for coal-mine exhibit (111408).

EIGHTY-FIRST DIVISION, A. E. F., PERSONNEL OF (through Sergt. Paul Barry, Company G, Three Hundred and Twenty-first Infantry, and Corpl. Paul Corrigan, Headquarters Company, Three Hundred and Twenty-first Infantry): Portrait of Maj. Gen. Charles J. Bailey, A. E. F., by Joseph Cummings Chase (119105).

ELIAS, Rev. Brother, Barranquilla, Colombia: 160 specimens of plants from Colombia (118503).

ELWELL, LEWIS M., Seward, Alaska: 1 calf moose skin and partial skeleton from Kenai Peninsula, Alaska (115903).

ELY, Col. NATHAN DANA, United States Army, retired, Washington, D. C.: Propeller of Curtiss biplane used by Eugene B. Ely to fly from the U. S. cruiser *Birmingham* at Hampton Roads, Va., November 14, 1910, the first flight to or from any vessel in the world (115248).

ENGLES, W. L., Notre Dame, Ind.: 2 skulls of small mammals from Indiana (119757).

ENYART, WILLIAM R., Washington, D. C.: A model, one-twentieth size, of the Curtiss *Falcon* army airplane, 1925 (117086). Loan.

ERWIN, Miss ISABELLE McCAW, Washington, D. C.: Fragments of an original English copperplate print, The Allegory of Franklin and Washington, on linen, purchased in England between 1781 and 1784 by a member of the House of Burgesses of Virginia (118725).

ERWIN, ROBERT, Elkhart, Ind.: 2 fox squirrels from southern Michigan, Hillsdale County (116700).

ESKEY, Dr. C. R., Washington, D. C.: Skin and skull of a rice rat from Lima, Peru (116468); 12 small mammals from the island of Maui, Hawaii (118938).

EWAN, JOSEPH, Los Angeles, Calif. (through Dr. S. F. Blake): 40 specimens of plants chiefly from California (118265). Exchange.

FAIRCHILD AVIATION CORPORATION, New York, N. Y.: A Caminez engine, 1928, Type 447-C, 135 horsepower, 4-cylinder, air-cooled, radial; 1 cylinder and part of crank case sectioned to show construction (116686).

FAIRCHILD, GRAHAM, Coconut Grove, Fla.: 5 Lepidoptera (117629).

FAN MEMORIAL INSTITUTE OF BIOLOGY, Peiping, China: (Through Dr. Charles J. Shen) 42 crabs from China; 2 specimens of jellyfish used as food in China (105397, 114477, 117225, 117773, 117996); 200 specimens of plants from Shansi and Hopeh (Chihli); 19 study samples of woods of North China (113668, 115546, exchange).

FAN, Dr. T. H. (See under Sun Yat-sen University.)

FARR, ARTHUR B., Woonsocket, R. I.: Polished greenstone (cigar shaped) celt from Jamaica, British West Indies (117382).

FAULEY, CLYDE C., Glacier Park, Mont.: 2 amphipods (118743).

FEARING, Mrs. FREDERICK C., Bronxville, N. Y.: 3 busts, set of doll's china and furniture, 11 engravings, and 4 books (115587). Loan.

FEATHERLY, Prof. H. I. (See under Oklahoma Agricultural College.)

FELIPPONE, Dr. FLORENTINO, Montevideo, Uruguay: 8 lots, 13 specimens, of land shells and 2 insects from Uruguay (115389); 12 lots, 23 specimens, of land, fresh-water, and marine shells, chiefly from Uruguay (117067).

FELT, Dr. E. P., Stamford, Conn.: 11 type specimens of a new midge (118530).

FERGUSON, H. G. (See under Thomas J. Lynch.)

FERRIS, Mrs. J. L. G., Philadelphia, Pa.: The J. L. Gérôme Ferris collection of American historical paintings (96133); John Trumbull's traveling paint box, Thomas Sully's studio table and palette, Gilbert Stuart's palette, Thomas Moran's palette and brushes, together with a large collection of etchings, engravings, photographs, original drawings, lithographs, and other reproductions (119780).

FIDUCCIA, C. S., New Orleans, La.: 1 spider (118359).

FIELD MUSEUM OF NATURAL HISTORY, Chicago, Ill.: 20 Melanesian ethnological specimens (114547); 7 specimens of ferns from Panama (116493); 788 photographs of type specimens of plants (116494, 117-655); complete skull and complete lower jaws of an extinct mammal, representing 2 individuals, from the Santa Cruz formation of Argentina (116959); 409 specimens of plants chiefly from Peru (117353); 3 specimens of plants from Barro Colorado Island (117468); 5 specimens of ferns from Mexico (117892); 22 specimens of plants, chiefly ferns from British Honduras (118789); 2 specimens of ferns from Colombia (119302). Exchange.

FINDLAY, Miss MARY BAYLES, Brooklyn, N. Y.: Pair of silver shoe buckles of the period of the Revolution (118917).

FIRTH, FRANK E., Cambridge, Mass.: 1 crab from off New Jersey (115498).

FISHER, Dr. A. K., Washington, D. C.: 1 red-bellied hawk (117427). (See also under E. C. Green.)

FISHER, GEORGE L., Houston, Tex.: 83 specimens of plants from Texas and New Mexico (118136).

FLEETWOOD, R. J., Kurtz, Ind.: 1 least short-tailed shrew from Kurtz, Jackson County, Ind. (119283).

FLETCHER, T. BAINBRIDGE, London, England: 100 specimens of reared and named Indian moths (Microlepidoptera) (118241).

FLORIDA GEOLOGICAL DEPARTMENT, Tallahassee, Fla.: (Through Gerald M. Ponton) 2 crayfishes from Florida (111409); 27 specimens, 3 species, of marine mollusks from Mayport, Fla. (117639).

FLORIDA STATE MUSEUM, Gainesville, Fla. (through Dr. T. Van Hyning): 2 fresh-water shrimps from Florida (118352, 119509).

FLORIDA, UNIVERSITY OF, Agricultural Experiment Station, Gainesville, Fla.: 2 flies (118385).

FOERSTE, Dr. A. F., Dayton, Ohio: Approximately 10,000 specimens of fossils from the Ohio Valley, including types from the Tennessee area, representing the fourth shipment of the donor's private collection (113862).

FORBES, Prof. R. H., Tucson, Ariz. (through Dr. Walter Hough): A stone arm ring from the Tuaregs of West Africa (118775).

FORBES, Dr. W. T. M., Ithaca, N. Y.: 18 specimens of moths, including several species (119459). Exchange.

FORD, M. H., Harlingen, Tex.: Chipped stone artifacts collected by donor along various arroyos in Rio Grande Valley of Starr County, Tex. (115932).

FOSHAG, Dr. WILLIAM F. (See under W. E. Lockhart and Smithsonian Institution, National Museum.)

FOSTER, E. E., Kingston, N. Y.: Phosphate pebbles from Wrightsville Beach, N. C. (119720).

FOSTER, JOHN G., Lyerly, Ga.: 12 flies (119189).

FOWLER, Dr. HENRY W., Philadelphia, Pa.: 1 toad and 11 lizards from Africa (117248). (See also under Academy of Natural Sciences.)

FOWLER, Mrs. MARVIN E., Washington, D. C.: 53 specimens, 7 species, of marine shells (116467).

FRANKLIN, LAFAYETTE, Washington, D. C.: A collection of rocks and minerals assembled by Nelson Franklin (118380).

FREDERICK, MD., CITY OF (through Elmer F. Munshower, mayor): Old tower clock movement of about 1791 (111628).

FRIEDMANN, Dr. HERBERT, Washington, D. C.: Nest and 1 egg containing embryo of field sparrow (116719); 1 screech owl (119573).

FROST, Dr. S. W., Arendtsville, Pa.: 7 flies collected at Brownsville, Tex. (118249); 30 specimens of beetles collected in Texas (118378).

FULLER, LEO H. (INC.), Long Island City, N. Y.: Brooklyn Bridge, an example of silk stencil printing in water color (117688).

FULTON, Dr. B. B., Raleigh, N. C.: 2 crickets, holotype and allotype (118519).

GAHN, Mrs. BESSIE W., Washington, D. C.: A photograph of a miniature from life of Physician-General William Brown of the Continental Army, great (3d) grandfather of the donor (116613).

GARBER, J. S., Winchester, Va.: 4 slabs containing Devonian and Silurian fossils from near Winchester, Va. (117071).

GARBER, PAUL E., Washington, D. C.: A Paragon propeller, made about 1920, of twisted hickory laminations (116022); a letter commemorating the twenty-fifth anniversary of the first human flight, by the Wright brothers, mailed from Kitty Hawk, N. C., December 17, 1928 (116406); a Monosoupape propeller used with a Gnome engine in a Nieuport pursuit plane in 1917 during the World War (116851); Smith Premier typewriter, No. 2, of about 1895

GARBER, PAUL E.—Continued.
(117095); a Chinese pocket sundial with compass and vertical gnomon (117635).

GARDNER, Mrs. DANIEL, Newburgh, N. Y.: China, glass, silver, clocks, furniture, jewelry, textiles, pictures, samplers, baskets, kitchen utensils, and miscellaneous household objects of early part of nineteenth century (780 specimens) (115031).

GARDNER, J. C. M., Dehra Dun, India: 10 beetles from India (119784).

GARNER, HARRY E., Washington, D. C.: 2 carved wooden spoons with decorative anito figurine handles (115766).

GARNIER, Rev. Brother ANTONIO. (See under Instituto Pedagogico de Varones.)

GATES, Prof. F. C. (See under Kansas State Agricultural College.)

GATES, Prof. GORDON E., Rangoon, Burma: Approximately 25 specimens of shrimps (118358).

GATEWOOD, Mrs. CHARLES B., sr., Los Gatos, Calif.: Water-color portrait of Nana, a Chiricahua Apache, by Harmon, painted on the Geronimo campaign in Mexico (117644).

GEE, Dr. N. GIST, Peiping, China: 3 fresh-water sponges, cotypes of new species (117649).

GEIGAN, EDWIN, Washington, D. C.: A model of the Waco Taperwing airplane, a modern commercial type (119800).

GEOLOGISCHES PALAEOONTOLOGISCHE INSTITUT DER UNIVERSITAT TUBINGEN, Tubingen, Germany: Positive cast of a fossil reptile (118619). Exchange.

GERREN, JOHN M., Fort Lauderdale, Fla.: A sample of weathered sandstone showing a peculiar form of exfoliation, from near Dayton, Tenn. (116081).

GIANFERRARI, Prof. LOUISA. (See under Museo Civico di Storia Naturale.)

GIDLEY, Dr. J. W. (See under Smithsonian Institution, National Museum.)

GILL, DeLANCEY, Washington, D. C.: Photograph of English landscape, 1870, and 50 stereoscopic views taken by Wheeler Survey, 1871 to 1874 (119758).

GILLESPIE, Dr. JOHN W., Tempe, Ariz.: 797 specimens of plants from Arizona (117246, 119556); 86 specimens of plants from Arizona (118701, exchange.)

GILLETTE, Maj. D. H., Washington, D. C.: Nest of oriole (117109).

GILMORE, C. W. (See under Smithsonian Institution, National Museum.)

GLASCO PRODUCTS Co., Chicago, Ill.: 42 specimens of pharmaceutical equipment (115958).

GLASSELL, STEVE A., Beverly Hills, Calif.: 1 vial of fossil crab claws (116917).

GLOYD, H. K., Ann Arbor, Mich.: 12 tree frogs from Kansas (117752).

GLUCK, Prof. Dr. HUGO. (See under Botanisches Institut der Universität.)

GODWIN, Mrs. ELMER, San Carlos, Ariz. (through Neil M. Judd): Fragment of a corrugated cooking pot found on an old ruin 7 miles east of Bylas, Ariz. (116339).

GOLDMAN, E. A., Washington, D. C.: 8 specimens of mollusks from Cleveland Creek (altitude 8,500 feet), Shell Creek Range, Nev. (117885).

GOLDMAN, MARCUS. (See under Herrn Bergrat Ing., Karl Krieger.)

GOODRICH, Dr. CALVIN. (See under University of Michigan.)

GOODYEAR TIRE AND RUBBER Co. (INC.), Akron, Ohio: A model, one-eightieth size, of a proposed type of rigid dirigible airship for transoceanic passenger service (109008).

GORDON, JACK G., Wigtownshire, Scotland: 1 Tristan rail in alcohol (119047). Exchange.

GORGAS MEMORIAL LABORATORY, Ancon, Canal Zone (through L. H. Dunn): 4 insects from Canal Zone (118607).

GOSLIN, ROBERT, Columbus, Ohio: 11 short-tailed shrews, 3 deer mice, and 5 Georgian bats (119289).

GOSSWEILER, J., Angola, Portuguese West Africa: 308 specimens of plants from Africa (116618).

GOTTHOLT, ROYCE and FRANK, Marfa, Tex.: 4 ancient basketry fragments found in Cave No. 1 on the Mollie B. Knight ranch, Presidio County, 18 miles south of Valentine, Tex. (116855).

GRAHAM, DR. DAVID C., Fairport, N. Y. (through C. F. Wood, Suifu, China): 6 mammals, 8 snakes, 1 lizard, 5 skeletons of birds, and 2 birdscreens (116504).

GRAHAM, Judge W. J., Washington, D. C.: A small collection of fossils from Nauvoo, Ill. (115412).

GRANT, Maj. CHAPMAN, Puerto Rico: 2 geckos from Vieques and Hamacaao, Puerto Rico (118245).

GRANT, ROBERT J., Washington, D. C.: 2 specimens of gold ore from Australia (118898). (See also under Treasury Department, Bureau of the Mint.)

GRAVIER, Prof. CH. (See under Muséum d'Histoire Naturelle, Paris, France.)

GRAY, MRS. MARION M., Santa Rosa, Calif.: The original log kept by Capt. H. C. Gray, United States Army Air Corps, on his record-making ascension of November 4, 1927, when his balloon rose more than 8 miles, surpassing all previous ascensions by man (115982).

GREEN, E. C., Natal, Brazil (through Dr. A. K. Fisher): 1 night heron (117428).

GREEN, MISS GEORGIANNA RING, Troy, N. Y.: Military insignia, swords, and candle stand, owned during period of Civil War by Lieut. Col. James M. Green, Forty-eighth Regiment, New York State Volunteers (117934).

GREENFIELD, RAY, Takoma Park, Md.: 1 sharp-shinned hawk (117235); 8 bird skins from New Mexico (117442); 10 amphipods (119779).

GRIEPENTROG, ELMER LOWELL, Salem, Oreg.: 12 bird sterna (118044).

GUEVARA, A., Baltazar, Bogota, Colombia: 100 miscellaneous insects and 14 specimens of plants from Bogota, Colombia (117913).

GUILLIAUMIN, DR. J. (See under Muséum d'Histoire Naturelle, Paris, France.)

GUNDER, JEANE D., Pasadena, Calif.: 16 specimens of butterflies (118518). Exchange.

GUTHRIE, Miss MARY J., Columbia, Mo.: 5 bats from near Columbia, Mo. (117421); 1 bat skin and skull from Rocheport Cave, Mo. (119009).

GWILLIAM, JAMES R. (See under Gwilliam Manufacturing Co.)

GWILLIAM MANUFACTURING Co., Philadelphia, Pa. (through James R. Gwilliam): Part of a cypress "knee" exposed in subway excavation in Philadelphia, Pa. (116708).

HAGELSTEIN, ROBERT, Mineola, N. Y.: 85 specimens of plants (molds) from Long Island, N. Y. (118760).

HALEY, C. J., Vancouver, British Columbia: A block of wood riddled with burrows of the northwest shipworm (119587).

HALL, DAVID G., jr., Charleston, S. C.: 21 flies, representing 6 species of *Sarcophaga*, 4 of them by types or paratypes (116681).

HALL, DR. MAURICE C., Washington, D. C. (through Dr. E. W. Price): 35 specimens, 3 species, of fresh-water shells from Hamilton, Mont., collected by Doctor Hall (115854). (See also under Department of Agriculture, Bureau of Animal Industry.)

HALL-SCOTT MOTOR CAR Co., Berkeley, Calif.: A collection of pamphlets, photographs, drawings, and clippings describing the Hall-Scott line of aircraft engines from the A-1 of 1910 to the L-6 of 1918, and a 2-bladed walnut propeller used with the Hall-Scott A-7-A engine (117475).

HAMILTON STANDARD PROPELLER Co., Hartford, Conn.: A 2-bladed, right-hand, metal propeller of modern type (118882).

HANGCHOW BUREAU OF ENTOMOLOGY AND PHYTOPATHOLOGY, Chekiang, China: 5 beetles representing 5 species from China (116489).

HANKINS, F. W. (See under the Pennsylvania Railroad.)

HANSEN, JOHN V., Washington, D. C.: A collection of 22 ancient Egyptian relics (117443).

HANSON, P. L., Washington, D. C.: Indian club (stone in hickory) found in a cave near Birmingham, Ala. (119399).

HAPEMAN, Dr. H., Minden, Nebr.: 1 specimen of plant (117643).

HARMAN, Mrs. ELIZABETH WOLFLEY. (See under Mrs. Elizabeth F. Wolfley.)

HARPER, Dr. FRANCIS, Swarthmore, Pa.: 14 amphibians and reptiles from Okefenokee Swamp, Ga. (115633).

HARPER, Dr. R. M., Tallahassee, Fla.: 9 specimens of plants from Alabama and Georgia (116234).

HARRAR, ELLWOOD S., jr. (See under Washington, University of.)

HARRINGTON, GEORGE L., Buenos Aires, Argentina: 41 lots, 283 specimens, of mollusks, 5 barnacles, and 1 group of worm tubes from Peru (110061).

HARRINGTON, JOHN P. (See under Miss Leonora F. Curtin.)

HARRIS, Dr. B. B., Denton, Tex.: 102 specimens of plants from Texas, New Mexico, and Colorado (116199).

HARRIS, B. R., Moneta, Va.: A perfect feldspar crystal, 17 by 10 inches (117395).

HARRISON, MISS CARRIE, Washington, D. C.: Black appliquéd lace collar made in Brussels in 1900, and 3 hand weavings made in Copenhagen in 1900 (119270).

HART, B. R., San Francisco, Calif.: Skeleton from Jones Point, Kodiak Island, Alaska (117221).

HARVARD UNIVERSITY, Cambridge, Mass.: 2 specimens of the mineral babingtonite from Mount Tom, Holyoke, Mass. (117755). Exchange.

Arnold Arboretum, Jamaica Plains, Mass.: 248 specimens of plants

from Southern and Western United States (115947); 22 specimens of ferns from Cuba (117187); 2,801 specimens of plants (118880); 191 specimens of plants from Brazil (118901). Exchange.

Farlow Herbarium, Cambridge, Mass.: 24 specimens of plants (117810). Exchange.

Gray Herbarium, Cambridge, Mass.: 152 specimens of plants from Brazil collected by Lyman B. Smith (116706); 28 photographs of plants (116840); 104 specimens of plants (118881); 10 photographs of plants, mainly type specimens of Bromeliaceae (119043); 93 specimens of plants from Brazil, collected by H. N. Whitford in 1918 (119273). Exchange.

Mineralogical Collection, University Museum, Cambridge, Mass.: An end slab from the Baquedano, Chile, meteoric iron (119307). Exchange.

Museum of Comparative Zoölogy, Cambridge, Mass.: Skin and skull of a mammal (cony) from Tanganyika Territory, Africa (114056); 6 skins of African birds, of forms new to the Museum (115491); 1 gecko from Navassa Island, Haiti (116597); 2 lots, 29 specimens, of mollusks from Cuba (116626); skull and lower jaws of a fossil horse (116653); 2 skins of heath hen and 2 skins of the masked bobwhite (117626); (through Dr. William J. Clench) 3 specimens, 2 subspecies, of mollusks, paratypes, from Beata Island, Dominican Republic (118589); 2 turtles from India and Burma (119393, exchange); 293 sea urchins from the Robert T. Jackson collection (115406); 1 Jamaican ground cuckoo (115589); (through Miss Mary Sears) 14 shrimps collected by the *Atlantis* in 1928 (115644); 1,750 specimens of Orthoptera (116403).

HAWAIIAN SUGAR PLANTERS' ASSOCIATION, Honolulu, Hawaii: 1 fly from Hawaii (118604); (through R. H. Van Zwaluwenburg) 3 beetles (118697).

HAWKINS, Mrs. CORNELIA HOWE, Springfield, Mass.: A framed portrait of Amasa Bemis Howe, inventor of a sewing machine, father of the donor (117687).

HAY, Prof. W. P., Kensington, Md.: Specimen of moss from Virginia (115844).

HEARNS, Mrs. BETTIE, Washington, D. C.: A domestic fowl with 4 legs, 4 wings, 2 bodies, and 2 necks (118720).

HEIKES, VICTOR C. (See under Thomas J. Lynch.)

HEMPHILL, Miss ORO JOE, Washington, D. C. (through Dr. Marcus Benjamin): Ethnological objects from various parts of Asia (115658).

HENDEL, Prof. FRIEDRICH, Vienna, Austria: 7 specimens of flies, representing 4 species (111523). Exchange.

HEPP, FRANK, Berwick, Ohio: Cutting bar from an early McCormick reaper, used by David Cromer, Seneca Township, Seneca County, Ohio (115878).

HERBERT, Miss EMMA S., Bound Brook, N. J.: 2 framed copies of a letter of Gen. Obediah Herbert describing the first trip of the locomotive *John Bull* (117084).

HERMANN, KARL, Mustang, Okla.: 5 specimens of sand barite crystals from Oklahoma (118350).

HERRERA, Prof. FORTUNATO L., Cusco, Peru: 189 specimens of plants from Peru (116066, 117236, 117654).

HERTLE, Mrs. ELEANORE DAUGHADAY, Lorton, Va. (through Louis Hertle): A topaz necklace presented to Mrs. James Monroe by her husband when minister to France, 1794-1796, and a catalogue describing the necklace; also a letter establishing its authenticity (113506).

HERTLE, LOUIS. (See under Mrs. Eleanore Daughaday Hertle.)

HESS, FRANK L., Washington, D. C.: A tektite (a glass of supposed meteoric origin) from near Ngan Fui, Province of Kwangsi, China (118038); a number of miscellaneous mineral specimens assembled from various sources (118899). (See also under S. R. Cragg.)

HIGGINS, EUGENE, New York, N. Y.: 50 etchings for special exhibition, March 28 to April 24, 1932 (118757, loan); an etching, "He Lands One," by the donor (119406).

HIGHEAGLE, ROBERT: A pair of modern Sioux Indian moccasins (118561).

HILDESHEIM, ERIK, Chicago, Ill.: Pieces of mail carried on pioneer postal air routes, photographs of the first official U. S. Air Mail Service, 1911, and of the first flight across the American continent by Calbraith P. Rodgers, New York to Pasadena, 49 days, 1911 (119536). Exchange.

HILL, A. W., Edinburgh, Scotland: 50 bromoil transfers for special exhibition during October and November, 1931 (115934). Loan.

HINE, HARRY O. (See under William Nunn.)

HITCHCOCK, Dr. A. S. (See under Department of Agriculture, Bureau of Plant Industry.)

HITCHEN, Dr. C. STANDSFIELD, Cambridge, Mass.: A mineral specimen containing sphalerite, siderite, dolomite, and chalcopyrite from Nenthead, Alston, Cumberland, England (116859).

HOBBS, EDMUND EVERETT, Utica, N. Y.: 2 fragments of gorgonians and 1 barnacle (116259).

HOBBS, KENNETH L., Linden, Md.: 258 specimens of marine invertebrates collected by the donor at Friday Harbor, Puget Sound, Wash., summer of 1928, and about 75 specimens of mollusks (102730); 1 flatworm, 4 barnacles, 8 hydroids, 2 alcyonarians, 5 ascidians, and 7 specimens of echinoderms (105241).

HOES, Mrs. R. G. (See under Mrs. Alfred Brosseau).

HOFFMAN, DR. JAMES J., Washington, D. C.: 1 sharp-shinned hawk (117180).

HOFFMAN, Prof. W. E. (See under Lingnan University.)

HOFFMEISTER, DR. J. E. (See under University of Rochester.)

HOLLINS COLLEGE, Hollins, Va.: 1 slide of insects, *aphis* (117748).

HOLMES, Prof. W. H., Washington, D. C.: A jadeite pendant from Oaxaca (?), Mexico (115579).

HOLMES, W. W., St. Petersburg, Fla.: A collection of bird bones, including type material (118595).

HOLOHAN, MARTIN K., Hyattsville, Md.: 2 United States bronze 1-cent pieces struck in 1925 (116193).

HOMBERSLEY, Ven. Archdeacon A., Port-of-Spain, Trinidad, British West Indies: 19 specimens of plants from Trinidad (115643, 116140, 116460, 118894, 119667).

HOOVER, Mrs. HERBERT. (See under Mrs. Sarah E. Myer.)

HORN, DR. WALTHER, Berlin-Dahlem, Germany: 2 flies and 2 beetles (116461, 119563). Exchange.

HORSFALL, R. BRUCE, Washington, D. C.: 1 chimney swift from District of Columbia (116019).

HORSFALL, Mrs. R. BRUCE. (See under Nature Magazine Co.)

HOUGH, DR. WALTER. (See under Mrs. F. C. Roberts, Mrs. Charles Solomon, Prof. R. H. Forbes, and W. C. Cobun.)

HOUSE, DEWITT, Florence, S. C.: Wooden fetish box and the turtle skull fetish contained therein (118214).

HOWARD, E. B. (See under University of Pennsylvania.)

HOWE, EDWIN A., Dobbs Ferry, N. Y.: Carved wooden pipe and a plaited hair chain, American folk art produced at the time of the Civil War (115848).

HOWELL, A. B., Baltimore, Md.: A skeleton of a kangaroo rat from Alexandria, Egypt (117454).

HOWELL, HAYWOOD, Fort Bragg, N. C.: 1 Al Vista Panoramic camera (116329).

HOWELL, JOHN THOMAS. (See under California Academy of Sciences.)

HOWERTON, DR. THOMAS J., Washington, D. C. (through Dr. Riley D. Moore): A truss made by Dr. A. T. Still, the "Founder of Osteopathy" (118115).

HOWES, H. E., Quantico, Va.: Portion of a fossil log from Quantico, Va. (118916).

HOYT, A. H., Ware, Mass.: An early form of wooden propeller used by the donor on an airplane about 1914 (117707).

HRDLIČKA, DR. ALEŠ, Washington, D. C.: An egg case of mollusk from Bristol Bay, Alaska (116204); a gray squirrel from Cleveland Park, D. C. (117065).

HUCKEL, EARLE W., Mouans-Sartoux (Alpes-Maritimes), France: A 2-color Rotogravure "Intimite," from the French magazine "Nuevos Horizontes" (118042).

HUGHES FUND, BRUCE, Smithsonian Institution: 2 Luristan ancient bronzes (116027).

HUMPHREY, Col. E. H., Fort Oglethorpe, Ga.: Cheyenne Indian belt and Sioux Indian baby cap (115957).

HUNTER, GEORGE W., 3d., Middletown, Conn.: 7 lots of helminths (117069, 118909).

HYMAN, DR. LIBBIE H., Chicago, Ill.: 8 slides and 11 specimens of *Hydra* (115429).

IDAHO, UNIVERSITY OF, Moscow, Idaho: 7 flies from Idaho (117674); 9 flies collected by Paul Rice in field traps in Idaho (118544).

IMORI, PROF. S., Tokyo, Japan: Fragmentary specimens of the mineral nagateelite, crystals of zircon and xenotime, and 2 samples of red earth, all from Japan (117397). Exchange.

INGLIS, CHARLES M., Darjeeling, India: 2 specimens of Slater's monal pheasant and 1 skin of bristled grass warbler (116136). Exchange.

INSTITUTO PEDAGOGICO DE VARONES, Managua, Nicaragua (through Rev. Brother Antonio Garnier) : 730 specimens of plants from Nicaragua (119518).

INTERIOR, U. S. DEPARTMENT OF THE: *Geological Survey*: A sample of tellurium-bearing ore from the Park-Utah mine, Park City district, Utah (116372); about 20 bones of Oligocene age from North Dakota, a fossil skull of horse from Alaska, and a skull from Beard No. 1 well, Caddo Parish, La. (116596); 5 boxes of geological specimens collected by Waldemar Lindgren from the Pyramid Peak, Smartsville, Colfax, and Truckee quadrangles, Calif. (117470); stalactites from inspection tunnel of Wilson Dam, Ala.-Tenn., and marcasite in fluorite from central Kentucky, collected and described by W. D. Johnston (117504); 2 lots of Upper Cambrian fossils from Sippary Ann (Cyprian) Butte, Mont. (117518); 5 boxes of dinosaur bones collected from the Dawson arkose of eastern Colorado by C. H. Dane (117519); a collection of Tertiary plants from Alaska described by Dr. Arthur Hollick (117880); 26 specimens of fossil plants illustrating Geol. Surv. Prof. Paper 170-C, by E. W. Berry (117908); a collection of geologic specimens from the Alleghany district, Calif., illustrating Geol. Surv. Prof. Paper 172, by H. G. Ferguson (118007); 67 specimens of Green River plants illustrating a paper by Dr. R. W. Brown (118111); 14 specimens of Cretaceous plants from southwestern Wyoming used to illustrate a paper by Dr. R. W. Brown (118527); 48 lots of Cambrian fossils collected in Lancaster and York Counties, Pa., by G. W. Stose and associates during the period 1915 to 1932 (118538); a lot of Cambrian fossils collected by L. F. Noble, in Resting Springs

Range, Avawatz Mountains quadrangle, Calif. (118541); 96 specimens, representing the rocks and associated ores from the Takilma-Waldo district, southwestern Oregon, including the Blue Creek district, and the Robertson, Humdinger, and Robert E. gold mines and vicinities, described by P. J. Shenon (118768); 350 specimens, representing 55 species, of fossil mollusks from the Tertiary of southern Florida, described by W. C. Mansfield (119555); anhydrite-bearing salt and anhydrite cap rock from American salt domes, described by M. I. Goldman (119725). (See also under J. Ellis Loremen.)

NATIONAL PARK SERVICE: (Through K. E. Weight) 143 specimens of plants from Bryce Canyon, Utah (116233).

INTERNATIONAL HARVESTER CO., Chicago, Ill.: 2 specimens each of medal and medalet commemorating the centennial anniversary of the invention of the reaper by Cyrus Hall McCormick, in 1831 (116251).

IOWA STATE COLLEGE, Ames, Iowa (through R. I. Cratty): 4 specimens of plants (116997). Exchange.

IOWA, UNIVERSITY OF, Iowa City, Iowa: (Through Prof. G. W. Martin) 48 specimens of plants (117633, 118497); 23 specimens of plants (119756). Exchange.

IOWA WESLEYAN COLLEGE, Mount Pleasant, Iowa: 12 specimens of beetles (104492); (through Prof. H. E. Jaques) 1 fly of the family Anthomyiidae (118230).

IVES, F. E., Philadelphia, Pa.: 4 polychrome-process color photographs, framed (119781).

IVES, Prof. J. D., New Haven, Conn.: A small lot of mites and nematodes (117464).

JACKSON, RALPH W., Cambridge, Md.: 6 specimens of mollusks from Brazil (118766).

JACKSON, T. LAMAR, Silver Spring, Md.: 2 old wheel-spoke tenon cutters (117458).

JACOT, ARTHUR P., Monroe, Conn.: 20 small Chinese mammals (116991); 2 frogs from China (119727).

JAQUES, MRS. BERTHA E., Chicago, Ill.: 66 etchings and aquatints by H. Luthmann, for special exhibition, February 29 to March 27, 1932 (116139). Loan.

JAQUES, Prof. H. E. (See under Iowa Wesleyan College.)

JARDIM BOTANICO, Rio de Janeiro, Brazil: 133 specimens of plants from Brazil (115816). Exchange.

JARVIS, E. (See under Australia, Bureau of Sugar Experiment Stations.)

JAYNE, H. F. F. (See under University of Pennsylvania.)

JENKINS, C. FRANCIS, Washington, D. C.: 1 lens disk receiver, 1 quartz-rod drum receiver, 1 kit-type receiver, 1 weather-map transmitter, and 1 weather-map receiver used by the donor in television and broadcasting weather maps (117977).

JEWETT, STANLEY G., Portland, Oreg.: 2 lots of bird bones (115843); 7 medusae from Willamette River, Oreg. (115969).

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.: Types of American Tertiary pteropods described by R. Lee Collins in a paper submitted to the National Museum for publication (117757). Deposit.

JOHNSON & JOHNSON, New Brunswick, N. J.: 37 specimens of adhesive and medicated plasters (116487).

JOHNSON, C. W., Boston, Mass.: 1 fly (109444). Exchange.

JOHNSON, DR. CHARLES W. (See under Charleston Museum.)

JOHNSON, JACK, Thetford, Quebec, Canada (through Judge Oscar E. Bland): Exhibition and study samples of asbestos from Thetford, Quebec, Canada (117664).

JOHNSTON, W. D., jr., Washington, D. C.: 1 specimen of blindfish (119507).

JOINT COMMITTEE ON THE LIBRARY. (See under Congress of the United States.)

JONES, MRS. LAURA, San Francisco, Calif.: Archeological objects and skeletal remains from Kodiak Island, Alaska (117220).

JONES, Lieut. Col. W. F. (See under War Department.)

JUDAY, DR. CHANCEY. (See under Wisconsin Geological and Natural History Survey.)

JUDD, NEIL M. (See under Mrs. Elmer Godwin.)

JULIO, Brother, Cochabamba, Bolivia: 186 specimens of plants from Bolivia (115399).

JUNIPER, Brother, O. F. M., Brookland, D. C.: Cap (Sole Deo) and a pair of sandals worn by the Order of Franciscan Friars (118142).

KALMBACH, E. R., Denver, Colo.: 38 sets of birds' eggs (118263).

KANEHIRA, Prof. R. (See under Kyushu Imperial University.)

KANSAS STATE AGRICULTURAL COLLEGE, Manhattan, Kans. (through Prof. E. C. Gates): 25 specimens of plants from Syria, Cyprus, and Egypt, collected by L. E. Melchers (113540); 12 specimens of plants from Kansas (119154, exchange).

KANSAS, UNIVERSITY OF, Lawrence, Kans.: 196 insects in the order Hemiptera, including 66 species, 54 of which are represented by one or more paratypes (117085); 2 insects, paratypes of 2 species (118520); 10 insects (119671).

KAPPA KAPPA GAMMA FRATERNITY, Columbus, Ohio: Badge of the Kappa Kappa Gamma Fraternity of the period of 1876 (115987).

KAY, DR. G. M., New York, N. Y.: 19 specimens of fossil brachiopods (117242). Exchange.

KEARNEY, DR. T. H. (See under Department of Agriculture, Bureau of Plant Industry.)

KEECH, MISS SUSAN P., Washington, D. C.: Adz with carved handle, of the Salish Indians, Oregon, and a bilobed basket from the Southern

KEECH, Miss SUSAN P.—Continued.
Indians (118774); collection of 16 miscellaneous ethnological specimens (119012).

KEEFER, Miss ELIZABETH E., Alpine, Tex.: 30 etchings for special exhibition, April 25 to May 22, 1932 (119221). Loan.

KEEN, Miss HARRIET A., Washington, D. C.: Silver tea service of early part of nineteenth century and a silver mug of latter part of nineteenth century (117389).

KELLETT, Miss BETTY, Wichita, Kans.: 59 slides containing specimens representing types of 35 species of fossil ostracods (118258).

KELLOGG, Dr. REMINGTON, Washington, D. C., and Prof. A. L. DRYDEN, Jr., Bryn Mawr, Pa.: 23 species, about 72 specimens, of fossil mollusks from Charles County, Md. (117756).

KELLY, Dr. HOWARD A., Baltimore, Md.: 2 flies from Indian Point, Magnetawan, Ontario, Canada (115836); 1 beetle taken out of a birch log (116031).

KELSO, LEON, Washington, D. C.: 2 specimens of plants from Colorado (118719).

KENDALL, Dr. WILLIAM C. (See under Walter H. Rich.)

KIKUCHI, Dr. KANZAEMON, Toyama City, Japan: 10 crabs and 13 shrimps from Japan (117451).

KILLIP, ELLSWORTH P. (See under Smithsonian Institution, National Museum.)

KING, Dr. R. E., Washington, D. C.: 16 specimens of graptolites from near Marathon, Tex. (117887).

KINSEY, C. A., Belgrade, Mont.: Fossil skull of rhinoceros (117329).

KIRK, Dr. EDWIN. (See under Standard Oil Co. of New Jersey.)

KIRN, ALBERT J., Somerset, Tex.: A collection of fossil plant material from Wilcox formation near Lytle, Tex. (117754).

KLAUBER, L. M., San Diego, Calif.: 1 lizard from Arizona (117749).

KLUG, GUILLERMO, Iquitos, Peru: 515 specimens of plants from Peru (114167, 115134).

KNAPP, ARTHUR, Woodbury Heights, N. J.: Silk and velvet patchwork "slumber throw" pieced in "crazy patch" pattern by Fidelia S. Hall Dickinson as a wedding present for her daughter, Anna, who married Isaac Newton Knapp on December 5, 1883 (116760).

KNIGHT, D. G., Valentine, Tex.: Archaeological specimens found on the surface near the ranch house of the Mollie B. Knight ranch in Presidio County, 18 miles south of Valentine, Tex. (116848).

KNIGHT, Dr. J. BROOKES, New Haven, Conn.: Paratypes and plesiotypes of gastropods described by the donor (115652).

KNIGHT, WILLIAM A., Biltmore, N. C.: 2 specimens of ferns (116723).

KNOBEL, Miss LOUISE, Hope, Ark.: 7 specimens of moths (116128).

KNOFF, CHARLES, Philadelphia, Pa.: 3 specimens of mollusks from Stone Harbor, N. J. (116724).

KNOWLTON, GEORGE F. (See under Utah State Agricultural College.)

KNUT, SARGEANT PRENTISS, Natchez, Miss.: Ferruginous concretions from Natchez, Miss. (116490).

KOBAYASHI, Dr. TEICHI, Tokyo, Japan: A plaster model of the Sakawa basin, southwest Japan (116902).

KORODI, Mrs. ALEXANDER, Budapest, Hungary (through Count László Széchényi, Hungarian minister): 2 dolls in Hungarian national dress (117514).

DE KRAFFT, Miss FRANCES BLATCHFORD, ESTATE OF (through Mrs. Glennie Tarbox): 3 northwest-coast baskets (116194).

KRIEGER, HERRN BERGRAT ING., KARL, Hallstatt, Austria: 3 specimens of minerals from Hallstatt, Austria (116038); (through Marcus Goldman) examples of the mineral glauberite from Hallstatt, Austria (118489).

KYUSHU IMPERIAL UNIVERSITY, Fukuoka, Japan (through Prof. R. Kanemura): 57 specimens of plants from Japan (115661). Exchange.

LABOR, U. S. DEPARTMENT OF:

Women's Bureau, Washington, D. C.: 3 films: "Good Working Conditions for Women," "The Home-Maker as Wage-Earner," and "Women Who Toil and Spin through the Ages," for use in the automatic delineascope to supplement health exhibits (118392).

LABORATORIOS DE LA DIRECCION GENERAL DE AGRICULTURA, San Salvador (through Dr. S. Calderon): 1 young vesper rat from San Salvador (116245); 4 specimens of a marine mollusk from the west coast of El Salvador (116427); 2 toads from San Salvador (116506).

LAIRD, MRS. WARREN P., Philadelphia, Pa.: Enlarged photograph of a photograph of Mrs. Millard Fillmore made during her residence in the White House, 1850-1853 (119579).

LARIMER, MRS. EDGAR B., Washington, D. C.: Chilkat basket collected in Alaska between 1890 and 1895 by Rear Admiral W. T. Burwell, the donor's father (116703).

LATROBE, COL. OSMAN, Omaha, Nebr.: Archeological material from sites in Wyoming and New Mexico (119011).

LATTA, RANDALL, Sumner, Wash.: 5 flies collected in Washington State (116746).

LAW, WILLIAM A. (See under the Penn Mutual Life Insurance Co.)

LAYTON, MISS FLORENCE W., Washington, D. C.: Piece of a hand-woven cotton counterpane used in the family of Charles Cutts, an ancestor of the donor, and United States Senator from Portsmouth, N. H., 1811-1814 (119152).

LEE, E. J., Minneapolis, Minn.: 29 study samples of Hawaiian woods and 1 small curly-maple board (115855); 4 pieces of miscellaneous woods (119565). Exchange.

LEGGETT, THOMAS H., Plainfield, N. J.: One 4-piece bamboo fishing rod used by the donor's grandfather probably before 1850 (119295).

LEHIGH UNIVERSITY, Bethlehem, Pa. (through Dr. Lawrence Whitcomb): 263 specimens of European brachio-pods (118494). Exchange.

LEMMER, FRED, Irvington, N. J.: 88 specimens of butterflies, rare species of *Heterocera* (119199). Exchange.

LEONARD, JOHN, Thackery, Ohio: 1 small trunk section of eastern red-cedar (119675).

LESUR, JACQUES, Paris, France: Portfolio of photographs and specimens illustrating stages in the manufacture of a wool and feather dress material made by Lesur et Cie., Paris (116614); 1 length of a wool and feather dress fabric, "Liova," made by Lesur et Cie. (117342).

LEVY, MISS BEATRICE S., Chicago, Ill.: 45 aquatints in color, dry points, and etchings for special exhibition, January 4 to 31, 1932 (117669). Loan.

LEWIS, CAPT. GEORGE C., Manila, P. I.: 2 stomatopods and 1 snake (117200).

LEWTON, MRS. A. L., Takoma Park, Md.: Gold Star Domestic sewing machine (119793).

LEWTON, DR. F. L., Takoma Park, Md.: Wood samples collected by the donor on his premises in Takoma Park, Md. (119574).

LIBRARY OF CONGRESS, Washington, D. C.: Dagger, pair of ancient silver tweezers, and a glove (117405). (See also under Estate of Mary Harrison McKee.)

LIGON, J. STOKLEY, Carlsbad, N. Mex.: Skeleton of Mearns's quail (115964).

LILLY & CO., ELI, Indianapolis, Ind.: 157 specimens to illustrate the history and use of Ma Huang and its derivatives (117808); 12 photographs illustrating manufacture of gelatine capsules (118573).

LINCOLN, MRS. FREDERICK C., Takoma Park, D. C.: Flint arrowhead found on the beach at North Beach Park, Md., during the summer of 1931 (116325); a set of 4 robin eggs (119161).

LINGNAN UNIVERSITY, Canton, China (through Prof. W. E. Hoffman): 208 specimens of plants from Kwangtung, China (115128). Exchange.

LINSLEY, E. GORTON, Oakland, Calif.: 22 specimens of beetles, representing 6 species, one of which is represented by a paratype (119746).

LITTLE, ELBERT L., jr., Muskogee, Okla.: Specimen of fern from Oklahoma (116035).

LITTLE, LUTHER, South Pasadena, Calif.: 1 bat from Isla Partida, Gulf of Lower California (119463).

LOCKHART, W. E., Ashland, Ky.: Examples of peridotite and concentrates from Elliott County, Ky. (115653); (through Dr. W. F. Foschag) stone "idol" collected some years ago in Mexico by the donor (119790).

LODING, H. P., Mobile, Ala.: 4 beetles, type, allotype, paratype, topotype, representing a new species from Sheita Cava, Madison County, Ala. (116413); 38 specimens of beetles, representing 3 species, with host-plant records (116623); 1 box turtle from Spring Hill, Mobile County, Ala. (118133).

LONG, The Misses, Washington, D. C.: 2 small engraved gold bracelets of colonial period presented to Alice Dearth by her grandmother, Mrs. William Bradford (116692). Loan. (See also under Miss L. M. Wood.)

LONGLEY, Dr. W. H. (See under Carnegie Institution of Washington.)

LOOFF, HENRY B., Oak Harbor, Wash.: 2 skulls, 3 lower jaws, a small lot of bones, and 2 fragments of pottery found on south end of Kodiak Island, Alaska (117076); 10 bone and stone implements from Alitak Bay, Alaska (117479).

LOREMEN, J. ELLIS, Portland, Oreg. (through Department of the Interior, Geological Survey): 8 specimens of Cretaceous fossils from Wheeler County, Oreg. (116250).

LOS ANGELES MUSEUM OF HISTORY, SCIENCE AND ART, Los Angeles, Calif.: Archeological specimens ex- cavated from the Grewe site, 1 mile east of the Casa Grande National Monument, Coolidge, Ariz., in 1930-31, by the Van Bergen-Los Angeles Museum Expedition (117404).

LOUDON, L. R., Tulsa, Okla.: 20 specimens of crinoids from Gilmore City, Iowa (116416).

LOUISIANA STATE UNIVERSITY, Baton Rouge, La.: 2 moths from Louisiana (118211).

LOUNSBERRY, Miss NELL, Costa Mesa, Calif.: 3 specimens of mollusks from California (118383); vial of egg cases of octopod from Newport Bay, Calif. (118886); egg cases of mollusk from California (119217).

LOVETT, CHARLES, Flat, Alaska: 1 specimen of *inconnu* whitefish (117481).

LOWE, E. N., University, Miss. (through Dr. L. W. Stephenson): 1 fossil tooth of a swimming reptile (119450).

LOWE, HERBERT N., Long Beach, Calif.: 13 specimens, 5 species, of marine shells from west coast of Mexico and Central America (116080).

LUCAS, ALFRED M., St. Louis, Mo.: 3 specimens of marine bivalves from Woods Hole, Mass. (119660).

LUND, JAMES B., and ROYAL D. DWIGHT, Chicago, Ill.: A pneumatic shock absorber and a variable pitch propeller designed and made by the donors and used on their tandem quadruplane of 1911 (115805).

LUSTIG, Miss GERTRUDE, Washington, D. C.: 2 leather cigar cases of latter part of nineteenth century, embroidered with beads (118490).

LUTZ, Dr. JOHN F., Baltimore, Md.: 1 lizard from Annapolis, Md. (119741).

LYNCH, THOMAS J., Tonopah, Nev. (through Victor C. Heikes and H. G. Ferguson): A specimen of gold ore from Manhattan, Nev. (115515).

MAGRUDER, PEYTON, Washington, D. C.: Cradle owned during latter part of eighteenth century by Col. William A. Washington, Continental Army (119833).

MAGYAR KIRALYI FOLDTANI INTEZET, Budapest, Hungary: Washings with microfossils, and rock samples from the Tertiary rocks at Budapest, Hungary (118220).

MAKRINIUS, DR. EMILIO, Oaxaca, Mexico: 6 specimens of ferns from Mexico (118908).

MALAISE, DR. RENE, Stockholm, Sweden: 3 specimens of sawflies (119744). Exchange.

MALLINSON & CO. (INC.), H. R., New York, N. Y.: 17 samples of pure-dye silk crêpe patterns, "George Washington Bicentennial Prints," showing reproductions and modern treatments of colonial designs, and 1 sample of unprinted silk crêpe (118355).

MALLOCH, J. R., Washington, D. C.: 2 flies (116901); 1 nest of white-crowned sparrow (117179); 39 wasps, representing 3 species (118715); 1 fly from Federated Malay States (118786); 1 insect from Urbana, Ill. (119197).

MARSHALL, BYRON C., Imboden, Ark.: 24 insects (117227, 118740); 3 specimens of marine bivalve from Florida (117326); 2 crabs (117346); 13 specimens of fishes from coasts of Florida and Louisiana (118499); 4 sponges from Mud Cove, about 15 miles south of Panacea, Fla. (118510); 1 specimen of coral from Florida (118702); 4 fiddler crabs from Spring Creek near Wakulla, Fla., taken in July, 1931 (118739).

MARSHALL, ERNEST, Laurel, Md.: 12 birds from Maryland and 4 bird skeletons (115813, 115830, 116374).

MARTIN, CHARLES H., Whittier, Calif.: 9 specimens of flies (117440).

MARTIN, PROF. G. W. (See under University of Iowa.)

MARTIN HARDSCOOG CO., Pittsburgh, Pa. (through Albert A. Munsch): 26 items of coal-mining tools, including saws, axes, drills, and shovels, for coal-mine exhibit (115673).

MARTIN, ROBERT F., Fairmont, W. Va.: 1 wood frog from Koons Pond, Marion County, W. Va. (118736).

MASARYK UNIVERSITY, Brno, Czechoslovakia: (Through Dr. V. Suk) 14 face casts of Kalmuks and Carpatho-Ruthenians (113432); 100 specimens of plants (118243). Exchange.

MATHESON, PROF. ROBERT, Ithaca, N. Y.: 3 flies collected in West Virginia (118907).

MAURY, C. L., Salem, Va.: 1 print of U. S. Capitol carte de visite (116861).

MAXON, DR. WILLIAM R., Washington, D. C.: 4 specimens of plants from North Carolina and Virginia (115946).

MAYNARD, ERNEST A., Jamaica, N. Y.: A specimen of datolite from Westfield, Mass. (117320). Exchange.

MCCORMICK - GOODHART, MRS. FREDERICK E., Hyattsville, Md.: Enlarged and framed photograph of a painting of Robert McCormick by Goldsborough Anderson, R. A., a copy of an autobiography, "Hands Across the Sea," by the donor, and an original patent model of a grain binder to accompany U. S. Patent No. 222416, issued to Leander J. McCormick, father of the donor, December 9, 1879 (119014).

MCCOY, HORACE BURTON, Washington, D. C.: 1 moose skull without antlers (118145).

MCCOY, WILLIAM, Daytona Beach, Fla.: Binnacle of the United States sloop of war *Saratoga* launched at Portsmouth, N. H., in 1842 (117683).

MCCRARY, O. F., Raleigh, N. C.: 1 specimen of plant (116857).

MCDIVITT, MISS JOSEPHINE, Washington, D. C.: Music sheet published in 1846 decorated with an example of plumbotype, entitled "Lady, the Rose I Give to Thee" (117983).

MCKEE, J. R. (See under the Estate of Miss Mary Harrison McKee.)

MCKEE, MISS MARY HARRISON, ESTATE OF (through J. R. McKee and Library of Congress): Wooden goblet owned by Benjamin Harrison and said to have been made from wood from a house in which Abraham Lincoln once lived (115962).

MCKINLEY, HOWARD W., Washington, D. C.: 1 specimen of harlequin or sargassumfish taken from sea grass, St. Johns River, Fla., in brackish water, about 3 miles from its mouth (118539).

MCLEAN, Mrs. NORTH, Westchester County, N. Y.: 2 specimens, 2 species, of marine shells from Jamaica (119661).

McMILLAN, H. C., Stanford University, Calif.: 6 fossil crustaceans (116701).

MELANDER, Prof. A. L., New York, N. Y.: 59 flies (119546).

MELHASE, JOHN, Berkeley, Calif.: A specimen of the mineral sanbornite with gillespite, from Mariposa County, Calif. (119317).

MENDEZ, Dr. ALEJANDRO. (See under the National Museum of Panama.)

MERINO, GONZALO, Columbus, Ohio: 160 specimens of Hymenoptera collected in the Philippine Islands (116412).

MESA, PEDRO DE, Mindoro, Philippine Islands: 33 lots, 675 specimens, of land mollusks from Mindoro Province, Philippine Island (116676). Exchange.

METCALF, Mrs. JESSE H., Washington, D. C.: Carved seed necklace, stone pick, and a bone pendant, all purchased in Honolulu, Hawaii, in 1910 (118215).

METCALF, The Misses, New York, N. Y.: A collection of 326 ethnological specimens mainly from the Philippines (114868). Loan.

MEXIA, Mrs. YNES, Berkeley, Calif. (through Mrs. H. P. Bracelin): 1 specimen of plant from Brazil (117679).

MEYERS, FRANK J., Ventnor, N. J.: 3 slides of rotifers (117412).

MICHIGAN, UNIVERSITY OF, Ann Arbor, Mich.: 2 frogs from Colombia (117048); 102 specimens of ferns from Central America (117093); 287 specimens of plants from British Honduras and Guatemala (118778, 119312); (through Dr. S. F. Blake) 124 specimens of plants collected in British Honduras and Guatemala by H. H. Bartlett; 25

specimens of plants from British Honduras (118879, 119299, exchange); 8 insects (117651); (through Dr. Calvin Goodrich) 250 lots, approximately 5,170 specimens, of fresh-water mollusks from Southern United States (117997); (through E. P. Creaser) 3 crayfishes (118002); (through Donald Ameel) 3 lots, 80 specimens, of fresh-water snails from Michigan, and Ontario, Canada (118259).

MILLER, C. W., New York, N. Y.: 1 pictorial photograph entitled "The Home Coming" (119527).

MILLER, MRS. ELLEN ROBERTSON, Coronado Beach, Fla.: 4 specimens of insects, 3 flies and 1 wasp (118454).

MILLER, GEORGE W., Rochester, N. Y. (through George H. Sedgwick): 1 pair of wooden-soled leather shoes, patented by the donor May 4, 1920, originally made during the World War for use in the trenches (118920).

MILLER, GERRIT, S., jr., Washington, D. C.: 1 medusa from West River, Md., collected by the donor (115857). (See also under Smithsonian Institution, National Museum.)

MILLER, DR. LOYE H., Los Angeles, Calif.: A sirenian tooth from the Pliocene or late Miocene of Orange County, Calif. (117402).

MILLS, EDWIN W. (See under Dr. Eli Trimble.)

MILWAUKEE PUBLIC MUSEUM, Milwaukee, Wis.: 79 specimens of invertebrate fossils from the Upper Mississippi Valley (117490). Exchange.

MINE SAFETY APPLIANCES Co., Pittsburgh, Pa. (through Albert A. Munsch): Mine safety equipment, including 4 leather belts, 6 self rescuers, 3 protective hats, and 1 first-aid kit, for coal-mine exhibit (115672).

MINNESOTA, UNIVERSITY OF, Minneapolis, Minn. (through Dr. C. O. Rosendahl): 96 specimens of plants from Minnesota (118532). Exchange.

MINNIX, Mrs. W. S., Washington, D. C.: Model of the harp-shaped telegraph register of 1846-47 and the medal of the Franklin Institute for 1852, presented to J. J. Clark for the self-winding telegraph register (119205).

MISSISSIPPI AGRICULTURAL AND MECHANICAL COLLEGE AND AGRICULTURAL EXPERIMENT STATION, State College, Miss.: 24 lots, 42 specimens, of land and fresh-water mollusks from Alabama (116310).

MISSOURI BOTANICAL GARDEN, St. Louis, Mo.: 4 specimens of plants from South Africa (117447); 63 specimens of plants from Utah (119202); 36 specimens of plants (lower cryptograms) mostly from Texas (119795). Exchange.

MOE, ALFRED, Washington, D. C.: A model, one-sixteenth size, of a Newport 27-C, French World War pursuit plane, 1917 (119801).

MONK, J. W., Donna, Tex.: 3 specimens of reared parasitic Hymenoptera (117194); 10 flies from Texas (117822, 119173); 75 insects, 5 adults, 49 larvae, 1 pupa, 20 puparia, of Diptera (118008).

MONROE, E. W., jr., Tampa, Fla.: 1 specimen of thread herring, taken in landing net near Tampa (118513).

MOORE, C. H., jr. (See under Mrs. Myra Wallace.)

MOORE, J. E., Sarasota, Fla.; Fossil bird bones collected in Florida by the donor (111566).

MOORE, JOHN ADAM, and JULIAN A. STEYERMARK, St. Louis, Mo.: 36 specimens of ferns (116459).

MOORE, DR. RILEY D. (See under Dr. Thomas J. Howerton.)

MORAND, F. W., McKinley Park Station, Alaska: 1,123 miscellaneous insects, collected in Mount McKinley National Park, Alaska (116733).

MOREAU, R. E., Tanganyika Territory: 6 African birds (117450).

MOREFIELD, S. V., Amelia, Va.: A crystal of topaz and a fragment of a topaz crystal from Amelia, Va. (116317, 116464).

MORGAN, R. S., Richmond, Va.: Glazed stoneware bottle found 14 feet under surface in the Department of Justice excavation, Constitution Avenue at 10th Street, NW., Washington, D. C., in November, 1931 (117422).

MORRIS, DR. ROBERT T., Stamford, Conn.: 1 mink skin and skeleton from Stamford, Conn. (118493).

MORSE, K. C., and H. B. SWEDLAND, Sterling, Colo.: A specimen of petrified wood from 2 miles west and 3 miles north of Stoneham, Colo. (116898).

MORTENSEN, NICKOLAS, Los Angeles, Calif.: 2 flies from Los Angeles, Calif. (119163).

MOSIER, CHARLES, Miami, Fla.: 10 specimens of mollusks of unusual light color from Dade County, Fla. (119522).

MOSIER, EVERETTE, New Salisbury, Ind.: Portion of a gray-fox skull (114019).

Moss, Rev. A. MILES, Para, Brazil: 17 specimens of plants from Brazil (115410, 118032).

MOURE, K. R., Sydney, Australia: A fossil crustacean from the Pleistocene of Port Darwin, North Australia (113905).

MUELLER, OSWALD, Houston, Tex.: 1 butterfly from Texas (100826).

MUNGER'S GIFT SHOP, Asheville, N. C.: A large vase made by W. B. Stephen, Pisgah Forest Pottery, Asheville, N. C., in 1931 (117183).

MUNSCH, ALBERT A. (See under American Optical Co., Buckeye Aluminum Co., Edison Storage Battery Co., Egyptian Tie and Timber Co., Martin Hardsoeg Co., Mine Safety Appliances Co., Philips Mine and Mill Supply Co., Portable Lamp and Equipment Co., United States Rubber Co., and Wolf Safety Lamp Co.)

MUNSHOWER, ELMER F. (See under Frederick, Md., City of.)

MURBARGER, Miss NELL, Kaweah, Calif.: 1 cockroach, 3 cranefly larvae, and 1 lizard, all taken on the north fork of the Kaweah River, Tulare County, Calif. (118737).

MURBARGER, W. B., Kaweah, Calif.: 24 specimens of millepedes from California (118452); 1 beetle larva collected in California (118940).

MURRAY, Rev. J. J., Lexington, Va.: 1 lark bunting (118238); 1 specimen of downy woodpecker (119553).

MUSEO CIVICO DI STORIA NATURALE, Milan, Italy (through Prof. Louisa Gianferrari): 18 specimens of fishes, representing 9 species, 2 cotypes from island of Rhodes, Asia Minor, the others from deep water of Straits of Messina (117120). Exchange.

MUSEU NACIONAL, Rio de Janeiro, Brazil: 880 specimens of plants from Brazil (119179). Exchange.

MUSEUM D'HISTOIRE NATURELLE, Paris, France: (Through Prof. Ch. Gravier) 6 specimens of amphipods (116691); (through Dr. J. Guilliaumin) 1 specimen of plant (116849); 2 specimens of plants (117107, 117433). Exchange.

MUSEUM FÜR NATURKUNDE, Berlin, Germany: Casts of a problematic fossil (116699).

MUSEUM OF ANTHROPOLOGY AND ETHNOGRAPHY OF THE ACADEMY OF SCIENCE, Leningrad, U. S. S. R.: Collection of 39 ethnological specimens (103666). Exchange.

MUSEUM OF NORTHERN ARIZONA, Flagstaff, Ariz. (through L. F. Brady): A 190-gram specimen and a few fragments of the Winona meteorite (117999). Exchange.

MUSGRAVE, Prof. PAUL N., Fairmont, W. Va.: 8 specimens of beetles from Tennessee (118353).

MYER, Mrs. SARAH E., Mount Vernon, N. Y. (through Mrs. Herbert Hoover): Wooden snuff box and lacquer box (119180).

MYER, W. H. (See under Mrs. Elizabeth O. Schreiner.)

NANKING, CHINA, METROPOLITAN MUSEUM OF NATURAL HISTORY, Academia Sinica: 455 specimens of plants from Kweichow (116844, 117982, 119203). Exchange.

NARAGUTA KOROT AREAS (LTD.), Korot, Nigeria, Africa: Placer minerals and a specimen of pegmatite containing cassiterite from Nigerian tin fields (117056). Exchange.

NARODNI MUSEUM, Prague, Czechoslovakia: 3 casts of Barrande's types of 3 species of brachiopods (118567). Exchange.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS, Hampton, Va.: Collection of aircraft accessories comprising 9 propellers, 1 impeller, 2 gas pumps, 4 radiators, a wing light, and a rudder frame (115247). Transfer.

NATIONAL GEOGRAPHIC SOCIETY, Washington, D. C.: 1,230 bird skins, 1 bird skull, 7 mammal skins, 1 mammal in alcohol, 9 mammal skulls, 19 amphibians and reptiles and 137 herbarium specimens, from Venezuela-Brazil boundary region (115361); 124 bird skins, 1 small lot of birds in alcohol, 50 insects, and 51 specimens of plants from Venezuela-Brazilian boundary region, collected by the society's expedition under the leadership of Ernest G. Holt (115431); 27 birds from Venezuela (119408).

NATIONAL WARM AIR HEATING ASSOCIATION, Columbus, Ohio (through Richardson and Boynton Co.): Richardson and Boynton warm-air furnace, purchased in 1850 by Washington Irving for Christ Church, Tarrytown-on-Hudson, N. Y. (117586).

NATURE MAGAZINE CO., Washington, D. C. (through Mrs. R. Bruce Horsfall): 3 stereotype plates of sharks (116373).

NATURHISTORISCHES MUSEUM, Vienna, Austria: 323 specimens of plants from China collected by Dr. H. F. von Handel-Mazzetti (116084); 132 specimens of Chinese plants, 44 hepaticas, 27 lichens, and 61 ferns, received through Doctor Handel-Mazzetti (119292). Exchange.

NATURHISTORISKA RIKSMUSEET, Stockholm, Sweden: 425 specimens of Scandinavian mosses (117890); 178 specimens of European plants (119280). Exchange.

NAVY, U. S. DEPARTMENT OF THE: Bureau of Aeronautics, Washington, D. C.: Photographs of aircraft, including a number of detail views of the rigid dirigible airship *Akron* (117893).

Naval Medical School, Washington, D. C.: 5 snakes from President Hoover's camp on the Rapidan River, Va. (115940, 116144).

NEEDHAM, Prof. JAMES G., Ithaca, N. Y.: 2 flies from West Virginia (119745).

NEILD, EDWARD F., Shreveport, La.: 2 lots of potsherds from Louisiana (117424).

NELSON, Dr. E. W., Washington, D. C.: 3 bats from Malone, N. Y. (116256). (See also under Dr. Thomas Barbour.)

NEWELL, E. M., Coconut Grove, Fla.: 1 dragonfly from Florida (115522).

NEW HAVEN CLOCK CO., New Haven, Conn.: 4 modern electric clocks and a group of 5 electric-clock movements (116213).

NEW JERSEY DEPARTMENT OF CONSERVATION AND DEVELOPMENT, Trenton, N. J.: Portion of a fossil crab from the Woodbury Clay, N. J. (116312).

NEW YORK BOTANICAL GARDEN, New York, N. Y.: 16 specimens of plants from Puerto Rico (116021); (through Percy Wilson) 4 specimens of ferns, 3 from Greenland and 1 from Iceland (116744); 4 photographs of ferns (119184); 483 specimens of plants from Southern United States collected by H. N. Moldenke (119575). Exchange.

NEW YORK CENTRAL LINES, New York, N. Y.: Two-inch specimen of the 127-pound Dudley section railroad rail of 1931 (113147).

NEW YORK STATE MUSEUM, Albany, N. Y.: Plastotypes of 6 species of a bryozoan (118039).

NEW YORK ZOOLOGICAL SOCIETY, New York, N. Y. (through Dr. C. H. Townsend): 1 shell of the extinct tortoise of Charles Island, Galapagos (116400).

NIEMEYER, Miss ERNESTINE H., Barranquilla, Colombia: 11 specimens of plants from Bogota region (116065).

NININGER, H. H., Denver, Colo.: A slice weighing 1,200 grams of the Sandia Mountains meteoric iron (118932). Exchange.

NOPCSA, Dr. F. BARON, Vienna, Austria: 6 casts of dermal bones of a type specimen of fossil reptile (119832). Exchange.

NORCROSS, ARTHUR D., New York, N. Y.: 5 bird skins collected by the Norcross-Bartlett Expedition to Greenland (116683).

NORCROSS-BARTLETT EXPEDITION, New York, N. Y.: A collection of marine invertebrates comprising sponges, pycnogonids, amphipods, phyllopods, marine annelids, bryozoans, shrimps, toment samples, barnacles, bottom samples, crabs, and stomach contents, also fishes, plants, echinoderms, mollusks, and insects.

NORMAN, SHIRLEY, Brooklyn, N. Y.: Fossil tooth of a hog from near Yellow Springs, Ohio (106261).

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N. C.: 4 insects (118926).

NORTH DAKOTA, UNIVERSITY OF, Grand Forks, N. Dak.: (Through Prof. G. C. Wheeler) 1 fly reared from larva (115517, exchange); microscopic slide of proglottis of a tapeworm; 5 beetles and 13 slides of small parasitic insects (115840, 117415); 12 mites (117775); 12 specimens of aphids (118553).

NORTON, J. B., Hartsville, S. C.: 1 specimen of fern from South Carolina (115493); potsherds found at an old Indian village site near Cape Henry, Va., in December, 1921 (116242).

NOYES, H. WALLACE, Portland, Me.: A specimen of cyanite from North Gorham, Me. (117974). Exchange.

NUNN, WILLIAM, Jacksonville, Fla. (through Harry O. Hine): 1 crane-fly from Florida (115403).

NUTTER, FARR, Port Huron, Mich.: Data on the first transcontinental air-mail flight, February 22, 1921, comprising a photograph, map, newspaper article, and letters (116451).

NYE, J. DAYTON, Glade Spring, Va.: 6 specimens of fresh-water shells (115496).

NYLANDER, OLAF O., Caribou, Me.: 10 specimens of mollusks from New Brunswick, Canada (116983).

OHIO STATE MUSEUM, Columbus, Ohio (through Edward S. Thomas): Bones of 4 species of birds from Ohio cave material (117813).

OKLAHOMA AGRICULTURAL COLLEGE, Stillwater, Okla. (through Prof. H. I. Featherly): 1 specimen of plant from Oklahoma (118506). Exchange.

OLD WORLD ARCHEOLOGY FUND, Smithsonian Institution: Cast of replica of clay bison from cave of Tuc d'Audoubert, Ariege, France (117456); 25 water-color reproductions of Spanish cave art of the Upper Paleolithic, and 14 casts of Upper Paleolithic bone art objects and implements (117631); collection of Upper Paleolithic objects excavated in south of France under direction of J. Townsend Russell during season of 1931 (117750); collection of 14 flint and quartzite Upper Paleolithic implements, and 1 photograph of a conch shell excavated under direction of J. Townsend Russell during season of 1931 (118935).

O'LEARY, ARTHUR L., Washington, D. C.: 1 flicker from Brookland, D. C. (116321).

OLIVER, Dr. W. R., Wellington, New Zealand: 3 specimens of marine shells from South Pacific (117057).

O'NEILL, Father HUGH. (See under Catholic University of America.)

ÖPIK, Prof. A., Tartu, Estonia: Numerous specimens of conodonts contained in glauconite sandstone from Estonia (117072); 17 specimens of

brachiopods from near Kunda, Estonia (117653, exchange.)

OREM, Mrs. DELIA BAYLY, Mrs. CARRIE BAYLY WEBSTER, and ALEXANDER SHEPHERD BAYLY, Cambridge, Md.: One horse gig of about 1790, given to Hon. Josiah Bayly, attorney general of Maryland, by his uncle, Josiah Polk, which has remained with the Bayly family ever since (118046). Loan.

OTERY, FRANCIS, Philadelphia, Pa.: Part of a chain of egg capsules of "lightning conch," an East American marine shell (115524).

OTAMA, Prof. JUNJI, New York, N. Y.: 2 salamanders from Japan (116602).

PACIFIC BIOLOGICAL LABORATORIES, Pacific Grove, Calif.: 3 lots of barnacles (115505).

PACKARD MOTOR CAR Co., Detroit, Mich.: The original Packard-Diesel aircraft engine, the first compression ignition oil burning engine ever flown (114883); 12 framed photographs relating to Packard-Diesel aircraft engines, sent for exhibition with original engine previously presented (117430).

PALÄONTOLOGISCHES UND PALÄOBIOLOGISCHES INSTITUT DER UNIVERSITÄT, Vienna, Austria: 10 lots of washings with Tertiary microfossils from Vienna Basin (118040). Exchange.

PALÆONTOLOGISK MUSEUM, Oslo, Norway: 3 specimens of a rare brachiopod from Norway (118788); 87 specimens representing 39 species of fossils from Paleozoic of Norway (119269). Exchange.

PALMER, Dr. R. H., Caibarien, Cuba: 2 polished stone celts from Cuba (117531).

PANAMA, NATIONAL MUSEUM OF, Panama City, Panama: (Through Dr. Alejandro Mendez, director) 16 specimens of marine shells from Panama, 1 coral and 1 scorpion (113724); 20 birds, 5 butterflies, and 1 plant (lichen) from Panama (116847).

PANGASINAN EASTERN ACADEMY, Tayug, Pangasinan, P. I.: 5 specimens of insects (116210).

PARKE, DAVIS & Co., Detroit, Mich.: A series of 62 specimens illustrating steps in manufacture of medicinal pills and tablets (118114); 4 pharmaceutical preparations (118446).

PARMELEE, Mrs. JAMES, Washington, D. C.: Hansom cab with harness (117780).

PARR, A. E. (See under Bingham Oceanographic Foundation.)

PARSONS, Dr. MARY, Washington, D. C.: Miscellaneous lot of mollusks, upper jaw of sleeper shark, 1 sawfish blade, 21 specimens of marine invertebrates, 35 ethnological specimens, 1 Brazil nut, 1 bird skin, and an ostrich egg (117444).

PATRICK, Dr. LEON, Orange, Calif.: 1 lovebird (118496); 1 turquoise paroquet (119149). (See also under Whittier Ornithological Academy.)

PATTON, Prof. W. S., Liverpool, England: 62 flies representing 26 species of named Diptera from India and Africa (118716). Exchange.

PEAIRS, Prof. L. H., Morgantown, W. Va.: 15 specimens of flies, including 10 of a bee parasite, collected in West Virginia (116414).

PEARSE, Dr. A. S., Durham, N. C.: 131 specimens of insects (Diptera) (116219); a collection of marine invertebrates and an ophiuran (116258); 125 isopods, 200 amphipods, 1 hermit crab, a collection of mollusks, and a holothurian, from Tortugas (117110); 25 specimens of isopods and 7 slides of protozoans, the latter including types and paratypes of 3 new species (118525); a collection of marine invertebrates taken in August, 1931, from Marquesas Islands: Approximately 40 crabs, 15 shrimps, 2 isopods, 1 fish, 5 hermits, and 30 barnacles (118727).

PECK, FLORENCE, South Bend, Ind.: 1 bat from Indiana (116151).

PELTON WATER WHEEL Co., San Francisco, Calif.: 5 old-style Pelton

water-wheel buckets, dated approximately from 1901 to 1912 (117363).

PENN MUTUAL LIFE INSURANCE Co., Philadelphia, Pa. (through William A. Law, president): A wood cut by Charles R. Gardiner illustrating the first air voyage in America, made by Blanchard in 1793 (117101).

PENNSYLVANIA, COMMONWEALTH OF, BUREAU OF BEDDING AND UPHOLSTERY, Harrisburg, Pa.: 4 charts mounted with feathers of goose, duck, and chicken, demonstrating commercial values and properties of each (119794).

PENNSYLVANIA RAILROAD Co., Philadelphia, Pa.: (Through Daniel M. Sheaffer) 2 pieces of rail sections of the type recently laid on tracks of Pennsylvania Railroad (116086); (through F. W. Hankins) exhibition material for *John Bull* locomotive centenary (Nov. 12, 1831–Nov. 12, 1931) celebration, comprising passenger car of 1837, 3 locomotive models, collection of photographs of Pennsylvania Railroad locomotives, and series of photographs illustrative of Camden and Amboy Railroad history (116860, loan).

PENNSYLVANIA, UNIVERSITY OF, UNIVERSITY MUSEUM, Philadelphia, Pa. (through E. B. Howard and H. F. F. Jayne): 25 bones of birds from a cave 50 miles west of Carlsbad, N. Mex., representing 13 species (117055).

PERKINS, J. U., Washington, D. C.: One 4-by-5-inch plate developing tank, Ingento make (119206).

PERRY, Mrs. NELSON R., Sanibel, Fla.: 1 crab (119023).

PERRYGO, WATSON M., Washington, D. C.: 16 specimens of fishes from Oxon Run (116017); skeleton of brier ray collected at Ocean City, Md. (116491); 1 skull of a loon (117426).

PETELOT, Prof. A., Hanoi, Tonkin, Indo-China: 11 specimens of plants from Tonkin (118592); 205 specimens of plants from Indo-China (119526, exchange). (See also under *École Supérieure d'Agriculture*.)

PETROCELLI, Mrs. JOSEPH, Brooklyn, N. Y.: 53 pictorial prints for special exhibition, December 15, 1931, to January 31, 1932 (117658). Loan.

PHILIPPINE ISLANDS GOVERNMENT:

Bureau of Science, Manila: 9 specimens, 5 species, of mollusks from Philippine Islands (115393); 163 miscellaneous insects from Philippine Islands (116294, 116607).

PHILIPPINE SUGAR ASSOCIATION, La Carlota, Occidental Negros, Philippine Islands: 33 flies (115637, 119309).

PHILIPS MINE AND MILL SUPPLY Co., Pittsburgh, Pa. (through Albert A. Munsch): A steel mine car for the coal-mine exhibit (115671).

PHILLIPPI, Mrs. U. M., Rockwood, Pa., and Mrs. CLARA J. SHINER and Miss EMMA B. CASEBEER, Somerset, Pa.: An all-white "stuffed quilt" elaborately quilted in raised patterns, grape, pineapple, sunflower, and urn, made by the donors' grandmother, Elizabeth Shaffer (Mrs. John A. Snyder), of Somerset, Pa., in 1817, when she was 15 years of age (117498).

PHIPPS, Mrs. S. C., Washington, D. C.: Chinese dish of the last dynasty, about 1850 (117186).

PICKEL, Prof. D. BENTO, Pernambuco, Brazil: 148 specimens of plants from Brazil (115520, 116207, 117063, 117337, 118546, 118731).

PICKERING GOVERNOR Co., Portland, Conn.: 2 Pickering governors, 1 constructed in form of original Pickering governor, the other a modern form of governor with various inclosures and adjustments (115810).

PIERCE, Dr. C. C., Washington, D. C.: A French plate and 2 pieces of ancient South American pottery (116323).

PIKE MANUFACTURING Co., Pike, N. H.: A collection of natural whetstones and a large photograph of manufacturing plant (115364).

PIKE, WILLIAM. (See under E. D. Reid.)

PILSBRY, Dr. H. A., Philadelphia, Pa.: 6 lots, 28 specimens, 4 species, of land shells from United States, Bahamas, and Panama (119672).

PINCHOT, Mrs. JAMES W. (deceased): 2 ivory carvings, boudoir box, card case, small mirror, black lace mitt embroidered and decorated with imitation gems (115408).

PIRION, P. ANASTASIO, Santiago, Chile: 28 specimens of flies (116909).

PITCAIRN, HAROLD F., and AUTOGIRO Co. OF AMERICA, Philadelphia, Pa.: Autogiro, 1928, the first of its type to fly in America, built in England under direction of the inventor Juan de la Cierva (115028).

PITTIER, Dr. H., Caracas, Venezuela: 1 specimen of plant from Venezuela (116068).

PLOWMAN, GEORGE T., Cambridge, Mass.: 51 prints for special exhibition, October 5 to November 1, 1931 (116463). Loan.

PLUMMER, Mrs. HELEN JEANNE, Austin, Tex.: Types of foraminifera described in University of Texas Bulletin 3101 (113939).

POLAND, GOVERNMENT OF, Geological Survey of Poland: About 35 specimens of Cambrian fossils (119218). Exchange.

POMONA COLLEGE, DEPARTMENT OF BOTANY, Claremont, Calif.: 1 specimen of plant from Argentina (119077). Exchange.

POND-EKBERG Co., Springfield, Mass. (through H. W. Pond): 1 engraved wood-block and a rubber plate made from it, and 1 print from each, 4 specimens (117108).

POND, H. W. (See under Pond-Ekberg Co.)

PONTON, GERALD M. (See under Florida Geological Department.)

POOLE, A. J., Washington, D. C.: 1 fly collected at Mount Pleasant, D. C. (119783).

POOPENOE, C. H., Silver Spring, Md.: 1 red-headed lovebird and 1 rosy-faced lovebird (118590, 119403).

PORT OF NEW YORK AUTHORITY, New York, N. Y. (through John E. Ramsey, general manager): Bronze medal commemorating opening of George Washington Bridge over Hudson River, 1931 (117252).

PORTABLE LAMP AND EQUIPMENT Co., Pittsburgh, Pa. (through Albert A. Munsch): A Davy lamp and 2 electric cap lamps for coal-mine exhibit (115677).

PORTUGAL, GOVERNMENT OF (through Viscount d'Alte, minister): Military uniforms and equipment of type used by enlisted men of Portuguese army during World War, 24 specimens (114301).

POST OFFICE DEPARTMENT, U. S.: 12 sets of specimen stamps in triplicate (4,057 specimens), received by Post Office Department from International Bureau of the Universal Postal Union, Berne, Switzerland (115384, 115685, 116215, 116410, 116738, 117393, 117832, 118226, 118533, 118887, 119228, 119511); United States and foreign pistols and revolvers, 7 specimens (115578); United States postage stamps issued 1930, 1931, and 1932, 58 specimens (119285); 2 specimens each of the following United States postage stamps: 5-cent, 10-cent, 15-cent, 20-cent, 40-cent, and \$1 air-mail stamps of the Canal Zone, 12 specimens (119561); 2 bird stones found in Ohio (119674).

POUGH, FREDERICK H., St. Louis, Mo.: A specimen of volborthite from Rueppel Mine, Stanton, Franklin County, Mo. (115905). Exchange.

POWEL, SAMUEL, HEIRS OF (through T. I. Hare Powel, Providence, R. I.): Atkinson "Cycle" gas engine, 1889-90 (117006).

POWEL, T. I. HARE. (See under Heirs of Samuel Powel.)

PRATT, LEE, Juneau, Alaska: Large stone chisel from Hawkins Island, Prince William Sound, Alaska (117335).

PRICE, DR. E. W., Washington, D. C.: 5 specimens, 1 species, of fresh-

water mollusks from Utah, collected by Doctor Swanson (117998). (See also under Dr. Maurice C. Hall.)

PRIVETTE, MASTER HENRY, Washington, D. C.: Stone implements from Cherokee Village sites at Fort Dobbs, near Third Creek, 10 miles south of Statesville, Iredell County, N. C. (115580).

QUERCI, O., Philadelphia, Pa.: 1,032 butterflies and moths (118037). Exchange.

RAMSEY, JOHN E. (See under Port of New York Authority.)

REBERHOLT, B. O. (See under Smithsonian Institution, National Museum, James Benn.)

RECORD, PROF. S. J. (See under Yale University, School of Forestry.)

REED, BOYD RICHARD, and RUDOLPH ASHTON, Washington, D. C.: Decorated ivory knife case from Labrador region (115702).

REED, PROF. E. L., Lubbock, Tex.: 52 specimens of plants from Texas (118036, 119286).

REED, DR. EDWYN P., Valparaiso, Chile: 4 aleyonarians from Valparaiso, Chile (115388); 2 specimens of land slugs from southern Chile (115704); 3 flies and 2 beetles collected in Chile (119544).

REED, FRED C., Washington, D. C.: Wagner Mica Plate Static Machine with $\frac{1}{4}$ -horsepower motor and electrodes, about 1900 (117429). Loan.

REED, FRED M., Riverside, Calif.: 5 specimens of mollusks collected on gulf coast at El Mulege, Lower California (117515).

REED, DR. S. ALBERT, New York, N. Y.: 3 experimental metal propellers devised by the donor in period 1916-1921 (108482).

REESIDE, DR. J. B. (See under Prof. R. D. Coffin.)

REID, D. MURDOCK, London, England (through Joseph Patrick Smyth): British silver half-crown struck in 1745 (119788).

REID, E. D., W. L. BROWN, and WILLIAM PIKE, Washington, D. C.: 1,274 specimens of fishes together with several shrimps, 1 crab, and a few isopods, from the Potomac River at Cobb Island, Md. (116039).

REINER, Capt. THOMAS A., Camp Meade, Md.: 67 small doubly terminated crystals of quartz from Roundup, Mont. (116702).

RESNER, ERNEST, Washington, D. C.: 3 insects (119401).

REYNOLDS, JOHN E., Meadville, Pa.: Original astronomical notebook and journal kept by Andrew Ellicott while locating the boundary line between United States and the Spanish possessions, 1797-1801, and rosewood instrument box used by Ellicott (118744).

RHODE ISLAND STATE COLLEGE, Kingston, R. I.: 9 specimens of beetles from Rhode Island (118004).

RHODES, Mrs. C. D., Washington, D. C.: 8 examples of shawls and laces, 1 Chinese painting on silk, and a black teapot (117182); 2 quilts, a baby's dress, a small collection of pottery, 2 officer's sashes, an engraved pipe bowl, and an old sewing machine (117457).

RICE, Dr. C. E. (See under Treasury Department, U. S. Public Health Service.)

RICH, WALTER H., Falmouth, Me. (through Dr. William C. Kendall): 11 specimens of fishes and a few mollusks and helminths obtained from the stomachs of swordfishes taken in the gully between Browns and Georges Banks during summer of 1931 (116713).

RICH, Dr. WILLIS, Stanford University, Calif.: Stone lamp from Afognak, Alaska (117345).

RICHARDS, A. G., Jr., Ithaca, N. Y.: 1 insect (116462).

RICHARDS, HORACE G., Washington, D. C.: 1,760 marine mollusks, 96 echinoderms, 1,500 crustaceans, 100 tunicates, chiefly from New Jersey and Delaware (115760); miscellaneous fossils from Pleistocene of New Jersey (117768); 3 specimens, including types of a Pleistocene hydrocoralline, described by the donor (118043).

RICHARDS, Capt. T. W., Washington, D. C.: A collection of mounted moths and butterflies (117685).

RICHARDSON & BOYNTON Co. (See under National Warm Air Heating Association.)

RICHFIELD OIL Co., Los Angeles, Calif. (through Dr. Hubert G. Schenck): Reverse of carapace of a fossil crab from "Tapo No. 42," Simi Field, Calif. (114644); a specimen of fossil crab (116471).

RICHMOND, Dr. PAUL. (See under Lieut. Commander S. S. Cook.)

RIGGS, HIRAM J., Atkins, Ark.: Indian skeleton found near Atkins, Ark. (114701).

RIKSMUSEETS PALEOZOLOGISKA AVDELNING, Stockholm, Sweden: 4 specimens of a historically important fossil brachiopod, and 2 photographs of Lindstrom's unpublished plates (117059).

RILEY, J. H., Washington, D. C.: 1 chimney swift (116082); 1 Lincoln's sparrow from Virginia (116319); 1 Connecticut warbler (116389).

RIMANN, Dr. E., Dresden, Germany: 3 samples of the mineral kalkowskyn (119229). Exchange.

RIVERSIDE JUNIOR COLLEGE, Riverside, Calif.: 15 insects from Riverside, Calif. (118555).

RIXFORD, Mrs. ELIZABETH, Burlington, Vt.: A framed print of Ravensworth, Washington Castle (118602).

ROACH, LESLIE, Tampa, Fla.: Human skull dug up near Tampa, Fla. (117350).

ROADS, Miss KATIE M., Hillsboro, Ohio: 3 specimens of plants (119567).

ROBBINS, JOHN W., Boston, Mass.: 1 original Bruleprint plate and 2 prints from it, 1 diagrammatic plate and a print from it, 1 etched plate and a print from it, 1 etching, a portrait of John W. Robbins, and 18 Brulegravure prints (118562).

ROBBINS, Miss MARY LOUISE, Washington, D. C.: 1 marsh hawk (117398).

ROBERTS, C. C., Malden, Mass.: A collection of about 25 ethnological objects from various parts of West Africa (116470); 1 group and 2 individual seated figures in cast brass, from Benin, West Africa (117532).

ROBERTS, Mrs. F. C., Tucson, Ariz. (through Dr. Walter Hough): Coiled basket from the Seri Indians near Guaymas, Mexico (118771).

ROBERTSON, Mrs. HAROLD R., Buffalo, N. Y.: 2 specimens of shells from Potomac River, near Mount Vernon, Va. (119673).

ROBINSON, Mrs. EDWARD C., Washington, D. C.: 6 examples of basketry and 2 skin pouches from Alaska (117099).

ROBINSON, MURRAY, Rockville, Md.: 1 starling nest in hornet's nest (115656).

ROCHA, Prof. DIAS DA, Ceara, Brazil: 10 specimens, 3 species, of land mollusks from Ceara, Brazil (115367); 93 specimens of insects from Brazil (116362).

ROCHESTER, UNIVERSITY OF, Rochester, N. Y. (through Dr. J. E. Hoffmeister): 12 specimens of a brachiopod from Rochester, N. Y. (117525).

ROCK, Dr. J. F., Likiang, Yunnan, China: 2 snakes from Yunnan (119550).

ROCKEFELLER FOUNDATION, INTERNATIONAL HEALTH BOARD, New York, N. Y.: 17 specimens of fishes from Venezuela (100604).

RODDY, Dr. H. JUSTIN, Lancaster, Pa.: A specimen of a trilobite from the Kinzers formation, Fruitville, Pa. (117630). Exchange.

RODHOLM, A. K., Berkeley, Calif.: 7 amphipods (115845).

ROEBLING FUND, Smithsonian Institution: 2 quartz crystals from Maine (115127); 9 mineral specimens and 1 slab of meteorite (117321); slab of the meteoric iron of Nativitas Tlaxcala, Mexico, weighing 2,305 grams (117445); 5 specimens of minerals from New Jersey (117467); 2 specimens of opal in the rough and 1 jadeite from Mexico (117528); 2

specimens of sulvanite (117772); 1 specimen of leucite from Italy (117927); 8 specimens of rare minerals (117986); 2 specimens of radium minerals from Belgian Congo (118073); 1 fracture slab of agate (118139); 16 specimens of minerals (118884); a crystal of phosgenite on matrix (11885); 3 crystals of beryl (aquamarine) (119045); 1 gold nugget, said to be the first leaf gold found in California, in 1849 (119296); crystals of gadolinite in the matrix (119396); 1 gold nugget found near Greenville, Plumas County, Calif. (119545).

ROHDENDORF, Prof. B. B., Leningrad, U. S. S. R.: 66 specimens of flies (Sarcophagidae) (118762). Exchange.

ROLLINS, EDGAR J., West Somerville, Mass.: 1 hand-woven wool blanket and 2 linen pillow cases made from wool and flax raised and spun on the Jacquith estate at Billerica, Mass., during the American Revolution (118293); hand reel, or niddy-noddy, for winding wool yarn into measured skeins, made before 1800 and formerly the property of the donor's grandmother, Louisa Wells, born in Loudon, N. H., August 5, 1810 (119222).

ROOSEVELT FIELD CLUB, Buffalo, N. Y.: 4 slabs of fossiliferous pyrite from Tully formation of New York (119747).

ROOT, Dr. F. M., Baltimore, Md.: 50 flies, representing 7 species of mosquitoes, by type of cotype, and some unidentified material in other families collected in tropical America (119279).

ROSENBERG, E. C., Copenhagen, Denmark: 9 larvae and 3 pupae (beetle), representing 9 species, 2 of which are new to the collection (118568).

ROSENDAHL, Dr. C. O. (See under University of Minnesota.)

ROSICLARE LEAD AND FLUORSPAR MINING Co., Rosiclare, Ill.: 2 samples of fluorspar from the company's mines at Rosiclare, Ill. (118163).

ROTH, ROBERT, Bartlesville, Okla.: 7 ostracods representing types of new species to be described in the *Journal of Paleontology* (118495).

ROWAN, EDWARD B., Cedar Rapids, Iowa: 1 larva of the clothes moth (117188).

ROYAL MUSEUM OF ART AND HISTORY, DEPARTMENT OF ETHNOGRAPHY, Brussels, Belgium: 5 ex-voto objects, collected in Belgium in 1930 and 1931 by Dr. Frans M. Olbrechts (115391). Exchange.

ROYAL PHOTOGRAPHIC SOCIETY, London, England: Portfolio of gravure reproductions of 6 prints from the Tyng collection (116407).

ROYAL SCOTTISH MUSEUM, Edinburgh, Scotland: 2 bird skins, Tristan bunting and Gough Island bunting (117223). Exchange.

RUNGIUS, CARL, New York, N. Y.: 24 dry points for special exhibition, April 25 to May 22, 1932 (119207). Loan.

RUNYON, ROBERT, Brownsville, Tex.: 103 specimens of plants from Texas and Arkansas (115401, 115906).

RUSSELL, J. TOWNSEND, Washington, D. C.: A collection of 770 European prehistoric bone, flint, and pottery objects from various sites (116916); 2 human skulls dug up in 1924 from a low mound on the edge of beach at Olympia Light, east coast of Florida (117903). (See also under Count Henri Begouen.)

RUSSELL, PAUL G. (See under Department of Agriculture, Bureau of Plant Industry.)

RUSSIA CEMENT CO., Gloucester, Mass.: 55 specimens showing stages in manufacture of animal and vegetable glues and of inks, together with applications of same (119282).

RYERSON, KNOWLES A. (See under Department of Agriculture, Bureau of Plant Industry.)

SAMELIUS, W. H., Elgin, Ill.: Collection of watchmakers' tools of period 1830 to 1880, used by John Proctor, watchmaker, of Odessa,

Russia, and Chicago, Ill., who worked in many of the famous watchmakers' shops of Europe and England, including that of Jules Jurgensen, of Copenhagen, Denmark (114878).

SCHAFFER, CHARLES, Brooklyn, N. Y.: 4 specimens of beetles, representing 4 species (119159). Exchange.

SCHAUS, DR. WILLIAM, Washington, D. C.: 780 species of Lepidoptera, received from J. F. Zikan, Rio de Janeiro, Brazil (117751). (See also under Commander C. Montague Dammers.)

SCHENCK, DR. HUBERT G., Stanford University, Calif.: 7 fossil crustaceans (116611, 116679, 117080); 4 fossil crabs from Oregon (117058, 117975); approximately 15 specimens of fossil crustaceans from Eocene of Oregon (117485); 1 fossil crab (119172); 9 fossil crabs collected by John T. Holman, Grays Harbor County, Wash., 1,000 feet east of Porter (119729). (See also under Richfield Oil Co.)

SCHIEFFELIN & CO., New York, N. Y.: 7 specimens of medicinal substances and pharmaceutical preparations (116734).

SCHINDLER, MRS. JENNIE, Parkville, Baltimore, Md.: 2 woodchuck skulls from the Neshanic Mountains, N. J. (116255).

SCHMID, EDWARD S., Washington, D. C.: 1 double yellow-headed parrot (116320); 5 birds (116322, 119763); 1 Cuban paroquet (116495); 1 orange-fronted parrot (117529); 1 Cuban parrot (118934); 1 magpie (119460); 1 grass parakeet (119751).

SCHMITT, DR. WALDO L. (See under Smithsonian Institution, National Museum.)

SCHREINER, MRS. ELIZABETH O., Forest Glen, Md. (through W. H. Myer): Pair of Sioux moccasins collected about 1870 or 1875 by Maj. Herman Schreiner, 9th Cavalry, United States Army (115659).

SCHUCHERT, Prof. CHARLES, New Haven, Conn.: 81 specimens of fossil brachiopods (117241). Exchange.

SCHUH, R. E., Brooklin, Me.: 50 specimens of plants (algae) (117204); 18 specimens of plants (algae) mainly from California (119797).

SCHULER, ANDREW, Perkasie, Pa.: 4 beetles (118022).

SCOFIELD, JOHN, Washington, D. C.: Lot of potsherds found on the surface of a plowed field on the north shore of New River, in Onslow County, N. C. (118041).

SEABOARD FELDSPAR Co., Baltimore, Md.: 1 large crystal of feldspar from the company's quarry at Moneta, Va. (115249).

SEARS, MARY. (See under Harvard University, Museum of Comparative Zoölogy.)

SEDWICK, GEORGE H. (See under George W. Miller.)

SEVERSEN, HANS, Iliamna, Alaska: Kenai Indian ax found at outlet of 6-mile lake, lower end of Lake Clark, Iliamna district, Alaska (116150).

SEVILLE, Miss M. W., Washington, D. C.: 6 tintypes and 36 cartes de visite (117896).

SEWARD, C. A., Wichita, Kans.: 59 lithographs, etchings, and block prints for special exhibition, November 2 to 29, 1931 (116852, loan); 1 lithograph, "Swans," by the donor (117636).

SHANNON, Mrs. CAROLINE WOLFLEY. (See under Mrs. Elizabeth F. Wolfley.)

SHANNON, RAYMOND C., New York, N. Y.: 56 specimens of plants from southern Argentina and Chile (117354); type of a new genus and species of fly collected in Bariloche, Argentina (117476); 2,000 specimens of flies representing about 500 species from Europe and 5 type specimens from North America (117652); approximately 12,000 specimens of insects, mostly Diptera, collected in South America (118030); 120 specimens of mosquitoes, representing 34 species of identified Culicidae from the Amazon region (118240).

SHANNON, THOMAS J. (See under Mrs. Elizabeth F. Wolfley.)

SHAW, Mrs. HANNAH B., Middleboro, Mass.: Swords, uniforms, and insignia owned during the Civil War by Maj. Thomas B. Griffith, Massachusetts Volunteers (119409).

SHAW, T. H., Peiping, China: 2 bats from Peiping, China (118583).

SHEAFFER, DANIEL M. (See under Pennsylvania Railroad Co.)

SHELDON, W. G., and RICHARD BORDEN, Milton, Mass.: 146 mammals and 9 birds from British Columbia (114953).

SHEN, Dr. C. J. (See under Fan Memorial Institute of Biology.)

SHEPPARD, Senator MORRIS. (See under Mrs. Gustine Courson Weaver.)

SHERWIN, C. ALLEN, Chevy Chase, Md.: An etching of the Lincoln Memorial, by the donor (115769).

SHIDELER, Prof. W. H., Oxford, Ohio: 53 specimens of fossil brachiopods (119451).

SHINER, Mrs. CLARA J. (See under Mrs. U. M. Phillipi.)

SHOEMAKER, CLARENCE R., Washington, D. C.: Approximately 100 isopods, 300 amphipods, 2 annelids, 1 hydroid, 25 ascidians, collected at Solomons Island, Md., July 27, 1931, by the donor (115856); 320 specimens of marine invertebrates collected at Grand View Beach, near Fort Monroe, Va. (117208).

SHOEMAKER, FRANCIS D., Washington, D. C.: Archeological and ethnological material, 4 old pistols, and a cannonball (115424); 67 archeological and ethnological specimens (116324); small beam balance or home drug scales, about 1860, 1 copy of Complete System of Arithmetic, by Nicolas Pike, 2d edition, 1797 (118773); a framed Plan of the City of Washington, engraved by Thackara & Vallance, Philadelphia, 1792, sometimes known as Andrew Ellicott's plan, whose name as surveyor appears on the map (119155). Loan.

SHOEMAKER, Mrs. W. E., Bridgeton, N. J.: The bronze medal of the International Exhibition, London, 1862, awarded to the Howe Sewing Machine Co., and the bronze medal of the Paris Universal Exposition, 1867, awarded to Amasa B. Howe, grandfather of Mrs. Shoemaker, for exhibits of sewing machines (115390).

SHREVE, FORREST, Tucson, Ariz.: 1 specimen of fern from New Mexico (117881).

SIM, ROBERT J., Riverton, N. J.: 153 beetles collected in Syria, representing 9 species, 6 of which are new to the collection (115699); 53 specimens of beetles, representing 4 species, collected in Poconos Mountains, Pa. (115811); 169 specimens of beetles, representing 48 species, mostly from Syria (117091).

SIMPSON, The Misses, Philadelphia, Pa. (through Dr. Clarence True Wilson): Relics of Bishop Matthew Simpson, 1811-1884, and his wife, Mrs. Ellen H. Simpson (104604).

SINGER, J. W., Stamping Ground, Ky.: 235 specimens of plants from Kentucky (116712).

SKEELS, H. C. (See under Department of Agriculture, Bureau of Plant Industry.)

SKINNER & SONS, WILLIAM, New York, N. Y.: 16 samples of pure-dye silks, representing yarn dyeing and piece dyeing, in variations of plain, twill, and satin weaves, intended for use as dress, shoe, lining, and corset fabrics (117978); 11 pairs of bench-made silk-fabric ladies' shoes for evening wear, 1 lace-trimmed satin undergarment, "scanties," and 1 model quilted satin comfortable, all made from silk fabrics manufactured by donor (119013).

SLEVIN, J. R. (See under California Academy of Sciences.)

SLOANE, W. & J., New York, N. Y.: 1 sample of printed scenic drapery fabric, "The Washington Toile," copied after an English design "The Allegory of Franklin and Washington," made soon after the American Revolution (118877).

SMALLWOOD, GRAEME T., Washington, D. C.: 10 pieces of Pueblo Indian pottery presented in memory of Mr. and Mrs. George T. Smallwood (117423).

SMELLOW, Mrs. MAURICE, Washington, D. C.: Model of a modern Chinese 3-masted junk with sampan (117408). Loan.

SMITH, DR. ALLYN G., Berkeley, Calif.: 29 specimens, 2 species, of land snail from Oregon and Washington (117089).

SMITH, DR. HUGH M., Bangkok, Siam: Ken (kan), national musical instrument of the Lao of northern Siam, collected at the Mahong Basin, Siam, in 1928 (115933); collections of natural-history specimens, comprising 1,014 bird skins, 12 bird skeletons, 87 mammals, 1,457 mollusks, 171 reptiles, 48 marine invertebrates, 831 insects, 8 echinoderms, and 2 fishes, all collected in Siam (115469, 115756); 41 mollusks from Siam (117414, 118754); 4 fishes (119293).

SMITHSONIAN INSTITUTION: Skeletal material and archeological objects from various sites in Alaska, Chinese skeletal material from old Alaskan canneries, bird and mammal bones, collected during summer of 1931 by Dr. A. Hrdlička (115748); 4 propellers, and 2 boomerangs used by Prof. S. P. Langley in aeronautical experiments (116085); 1 etching, Monte Caprino, Rome, by Herman A. Webster, associate member's print of the Society of American Etchers (117237); gold medal struck in 1932 by the National Academy of Design in honor of Samuel Finley Breese Morse and presented to the Institution by his granddaughter, Leila Livingston Morse (119524); Dieuaide's chart of aeronautical designs and aircraft proposed or made during the period 1500 to 1880 (117811). Deposit.

Bureau of American Ethnology: Archeological and skeletal material from various sites in Texas,

SMITHSONIAN INSTITUTION—Continued.
collected during May, 1931, by
F. M. Setzler (114568); ethnological
specimens from the Miskito and
Sumu Indians of Honduras and
Nicaragua presented to bureau
by Eduard Conzemius (115218);
archeological material collected
during summer of 1930 by Dr. F.
H. H. Roberts, jr., on Zuni Indian
Reservation, N. Mex. (115425);
archeological and ethnological
objects collected by Neil
M. Judd on San Carlos Indian
Reservation, Gila County, Ariz.
(115562); 3 specimens of shells
from Horrs Island, Fla., 1931
(115827); archeological material
collected for bureau at various
sites in Alabama and Florida by
M. W. Stirling during January–
April, 1931 (115902); skeletal
material and a dog skull collected
in Cedar Grove Cave, Marion County,
Ark., by W. M. Walker, and a de-
formed skull and 2 long bones
from Natchitoches, La. (116364);
1 lot of potsherds from a shell
mound on Harkers Island, N. C.,
presented to bureau by Douglas L.
Rights, Winston-Salem, N. C.
(116401); archeological material
collected by W. M. Walker during
1931 in the Ozark region of north-
central Arkansas and in Louisiana
(117184).

*National Museum, collected by mem-
bers of staff:* Bassler, Dr. R. S.:
Casts of types of invertebrate
fossils, particularly crinoids, pre-
pared in British Museum and
other museums of Europe, and 8
lots of washings with Cretaceous
and Tertiary fossils collected in
England, Germany, Austria, and
Hungary (115486); a collection of
conodonts from Mississippian of
Oklahoma (117665). Benn, James,
and B. O. Reberholt: Various
igneous rocks and fossil slabs
from Maryland and District of
Columbia, collected for exhibition

and duplicate series (117073);
miscellaneous minerals, including
thulite from Moneta, Va., and
titanium minerals and associations
from Piney River and Roseland,
Nelson County, Va. (117396).
Boss, Norman H., and party:
Collection of horse and other
fossil remains from vicinity of
Hagerman, Idaho (114979). Burt,
Dr. Charles E., Winfield, Kans.:
Collection of reptiles, amphibians,
and fishes, made during a trip
from Kansas to Washington, D. C.
(119836). Foshag, Dr. William
F.: Collection of ores and min-
erals from various localities in
Mexico; skulls and artifacts from
a cave at Charchas, San Luis
Potosi, Mexico (114861). Gidley,
Dr. J. W. (through C. W. Gil-
more): Archeological material
collected in 1924 and 1925 near
Melbourne, Fla. (118531). Gil-
more, C. W.: Vertebrate fossils
collected in Colorado, Montana,
and Wyoming in 1931, estimated
to comprise 1,200 specimens
(114962). Killip, Ellsworth P.:
213 specimens of plants from
Cuba and Louisiana; 27 specimens
of plants from England (117904,
119798). Miller, Gerrit S., jr.: 2
red bats, 14 cricket frogs, and 2
leopard frogs collected at Orange
Park, Fla. (116254). Property
clerk (W. A. Knowles): 2 Victor
typewriters used about 35 years
ago in the Museum (117094).
Photographer (A. J. Olmsted): 7
camera shutters, accumulated in
photographic laboratory during
many years (118523). Schmitt,
Dr. Waldo L.: Collection of ap-
proximately 4,000 marine inverte-
brates, together with echinoderms,
mollusks, fishes, and corals, col-
lected at Tortugas, Fla., under
auspices of Carnegie Institution
(115488). Watkins, William N.,
and Edward A. Avery: Trunk
sections of honeylocust and silk-

SMITHSONIAN INSTITUTION—Continued.
tree, collected in Washington,
D. C. (119151). Wetmore, Dr. A.:
31 bird skins and 41 bird skeletons
(119750).

National Museum, obtained by purchase: A collection of Pleistocene fossils made by C. P. Singleton in Florida in November and December, 1929, and January, 1930 (107904); 32 specimens of plants from British Honduras (108653); 560 specimens of plants from Paraguay (110004); 512 photographic prints of type specimens of plants (110549); 53 reptiles and 2 mammals from Australia (111792); mounted skeleton of Pacific pike whale from Glacier Island, Alaska (112668); 747 specimens of Dominican Republic plants collected by Dr. E. L. Ekman (113938); series I and II (1930, 1931) Hepaticae Selectae et Criticae, Nos. 1-100 (114633); 45 small mammals from Costa Rica (114655); 1,114 specimens of insects, 1,100 of which are Diptera, mostly Tachinidae (114882); 20 skins of 10 Korean birds, new to the Museum, and 6 frogs (114930); 2 blades of a Lang 4-bladed sectional propeller from the dirigible airship *Roma*, which was wrecked at Langley Field, Va., February 21, 1922 (115184); collection of objects from the Seminole, Sioux, Winnebago, and Menominee Indians (115409); 15 mammals, 49 bird skins, 4 land shells, 12 snakes, and 1 lizard (115434); 3 boxes of Cretaceous and Eocene fossils from Cuba (115583); 1 Arawak zemi from Cuba (115646); 26 plaster casts of paleolithic specimens (115650); 11 birds (115842); 8 skins of species of pigeons new to the Museum (115973); 140 birds (116018); 291 beetles (Scarabaeidae) (116379); 4 propellers and 1 impeller of the World War period, American manufacture

(116422); 25 specimens of mosses (116474); 200 specimens of plants from Trinidad (116476); 1 lot, approximately 850 specimens, chipped rhyolite blades found on a farm 9 miles north of Monroe, N. C. (116664); skull of a fossil horse, from Samos, Greece (116766); 1 Duke of York Island pigeon (116976); 9 models of pathogenic bacteria, and 3 life-history exhibits —1 each of the snake, rat, and tape-worm (117061); 525 photographs of type specimens of plants from South America (117062); an American chaise ("one-hoss shay") built at Union, Me., prior to 1830 (117103); 13 mammals from Ceylon (117105); 53 bird skins, 1 nest and 3 eggs (117249); a collection of Oligocene fossils from vicinity of Douglas, Wyo. (117446); approximately 200 pounds of *Obolus* sandstone and 33 additional specimens from other beds (117477); bronze medal commemorating the capture of Yorktown in 1781 (117615); skin and skull of a banded anteater from West Australia (117648); a model, one-sixteenth size, of the Bleriot XI airplane, which was the first to fly across the English Channel, July 25, 1909 (117656); 1 poi bowl from Hawaii (117667); 44 Spanish birds (117686); 241 specimens of plants from Southwestern United States (117774); prehistoric Eskimo artifacts of fossil ivory from near Sevunga, St. Lawrence Island, Alaska (117815); 12 photographs of type specimens of plants (117900); 29 specimens of Seminole Indian material (117909); pathological male human skull (118034); ancient Indian bow, probably of Siouan origin (118113); photograph of a plant (118116); 1 skin and 2 skeletons of a cane rat from Shwegen, Lower Burma (118168); 218 specimens of plants from Dominican Republic (118217); a

SMITHSONIAN INSTITUTION—Continued.
 book and a pamphlet printed by Benjamin Franklin and D. Hall (118225); 239 specimens of plants from Campeche, Mexico, collected by C. L. Lundell (118233); 12 birds (118246); natural-history material, comprising 7 mammals, 9 mollusks, 2 crabs, 2 birds, 39 insects, 7 reptiles, and 3 frogs collected in Indo-China (118390); a Swedish brass snuff box with Rune Staff (clog almanac) for year 1787, embossed on cover and bottom (118477); 22 bird skins (118534); 4 life-history groups, 1 each of the house fly, blow fly, house mosquito, and malaria mosquito (118560); 207 specimens of plants from Campeche, Mexico, collected by C. L. Lundell (118699); 200 flies collected by T. Vaughan-Sherrin, in Australia (118713); 100 specimens of plants (118728); fetish carved from quartz, found at Jicome, about 12 miles southwest of Moncion, Province of Monte Cristi, Dominican Republic (118763); 200 insects, Lepidoptera, from South Europe (118776); 45 articles of Seminole ethnology (118875); 28 mammals skins with skulls from Honduras (118951); 3 skins of New Guinea parrots of forms new to the collection (119027); 1 skin of a Turkestan dove (119042); collection of Eskimo archeological material from old villages on St. Lawrence Island, Alaska (119181); cane flute made by Seminole Indians of Florida (119182); plaster cast of skull of a primitive zeuglodont (119457); 253 specimens of plants from Bolivia (119461); 119 specimens of plants from Campeche collected by C. L. Lundell (119585); 115 specimens of plants from Ecuador (119714); 520 photographs of type specimens of plants in European herbaria (119721); 500 photographs of specimens of plants (chiefly types) in European herbaria

(119754); model, one-sixteenth size, of *Vin Fiz Flyer*, the Wright airplane, Type B., E-X, in which Calbraith Rodgers made the first transcontinental flight, New York to Pasadena, in 49 days, 1911 (119834).

National Museum, made in Museum laboratories: 3 casts of a stone pendant from Florida (original the property of J. G. Braecklein, Kansas City, Kans.) (115859); cast of the Gordon Bennett plaque awarded to Glenn H. Curtiss for winning speed event at International Air Meet, Rheims, France, 1909, from original loaned by National Aeronautic Association (116704); 2 plaster casts of a stone lamp from Alaska (original the property of C. S. Hubbell, Seattle, Wash.) (116787); 2 casts each of 2 pottery vessels excavated near Worthington, Ind. (originals the property of Judge Oscar E. Bland) (118221); 3 casts of a small earthenware jar (original the property of Fred E. Dyer, Worthington, Ind.) (118570).

National Zoological Park: 1 electric eel (115405); 66 mammals (115669, 116377, 116841, 117355, 118001, 118522, 118741, 119204); 174 birds (116375, 117448, 117819, 118112, 118222, 119516); 2 scorpions (116418); 2 specimens of giant hairy scorpions (117409, 118110).

SMYTH, JOSEPH PATRICK. (See under D. Murdock Reid.)

SNELLINGS, W. J., Washington, D. C.: 1 white canary (117493).

SOFIA, UNIVERSITY OF, Sofia, Bulgaria: 100 specimens of plants from Bulgaria (113485). Exchange.

SOLBERT, Col. O. N. (See under Eastman Kodak Co.)

SOLOMON, Mrs. CHARLES, Tucson, Ariz. (through Dr. Walter Hough): Prehistoric objects from cave and open ruins on Bonito Creek, Ariz. (119752).

SORDAHL, Mrs. L. O., Washington, D. C.: 49 mammals, 48 birds, 75 reptiles and amphibians, 661 insects, 7 mollusks, 2 crabs, and 158 plants, all collected in the vicinity of Mount Brukkaros and Keetmanshoop, Southwest Africa (106181).

SOUTH AFRICA, UNION OF, Geological Survey, Pretoria: A specimen of gold ore with hanging wall attached from Crown Mines, Johannesburg, South Africa (115446).

SOUTH AUSTRALIAN MUSEUM, Adelaide, South Australia: 3 male aboriginal skulls from Australia (114793). Exchange.

SOUTHEASTERN TEACHERS COLLEGE, Durant, Okla. (through Prof. Walter L. Blain): 229 specimens of plants from Oklahoma (115881).

SPARROW, Mrs. LOUISE KIDDER, Washington, D. C.: An ivory-tinted plaster portrait bust of the late Maj. Gen. William Crawford Gorgas, Surgeon General of the United States Army during the World War, made by the donor (117632).

SPENCER LENS Co., Buffalo, N. Y.: Automatic Delineascope No. 656 for projecting educational health films, and an extra universal motor No. C3586 for same machine (116205, deposit); 10 strip films to supplement health exhibits (118891).

SPRINGER FUND, Smithsonian Institution: 56 specimens of echinoids (117210, 117526, 118710); 7 specimens of fossils from the Devonian slates, Bundenbach, Germany (117527).

SQUIBB & SONS, E. R., New York, N. Y.: 10 specimens of official pharmaceutical preparations (118224).

SQUIER, Maj. Gen. GEORGE O., Washington, D. C.: A miniature pocketknife made in 1931 from steel made by Michael Faraday, 1819-1824 (118507).

STANDARD OIL Co. OF NEW JERSEY, New York, N. Y. (through Dr. Edwin Kirk): 60 specimens of Devonian fossils from Bolivia (116318).

STATE, U. S. DEPARTMENT OF. (See under Onderdewgaard von Blomme-stein.)

STEARNS & Co., FREDERICK, Detroit, Mich.: 5 specimens of official pharmaceutical preparations (116477).

STEELE, E. S., Washington, D. C.: 9 specimens of plants from the Allegheny Mountains, Md. and W. Va. (119404).

STEPHENSON, Dr. L. W. (See under A. W. Weeks and E. N. Lowe.)

STERNEBERG, GEORGE F., Hays, Kans.: Examples of 2 fossil hydrozoans from the Niobrara Cretaceous chalk of Logan County, Kans. (117472); skull, lower jaws, and partial skeleton of pteranodont (118256, exchange).

STEWART, Dr. F. E., Englewood, N. J.: 11 scientific books, including a copy of the first edition of the U. S. Pharmacopoeia, published in 1820 (119201); Chinese hand balance used by Dr. Orson Nicheson, grandfather of the donor (119318).

STEYERMARK, JULIAN A. (See under John Adam Moore.)

STILES, Dr. C. W., Washington, D. C.: 1 Florida deer skull from Marion County (117298). Exchange.

STINER, HARRY, New York, N. Y.: 3 lots, 10 specimens, of land snails from Portugal (118369).

STIRLING, M. W., Washington, D. C.: 51 ethnological specimens from the Tule and Negroid tribes of Panama (119515).

STONE, CLARENCE F., Branchport, N. Y.: 1 Shufeldt's junco (118501); 1 skin of a slate-colored junco (118784).

STONER, DAYTON. (See under Department of Agriculture, Bureau of Entomology.)

SUK, Dr. V. (See under Masaryk University.)

SUN YATSEN UNIVERSITY, Canton, China (through Dr. T. H. Fan): A collection of 13 reptiles from the Province of Kwang si, China (118764).

SUTTON, ERNEST R., Salem, W. Va.: Bones of a fossil reptile of Permian age from Jackson County, W. Va. (112370).

SWEDLAND, H. B. (See under K. C. Morse.)

SZÉCHÉNYI, Count LÁSZLÓ. (See under Mrs. Alexander Korodi.)

TAFT, ALAN C. (See under Department of Commerce, Bureau of Fisheries.)

TALLEY, Lieut. B. B., and ENLISTED MEN OF HEADQUARTERS AND SERVICE PLATOON, 29TH ENGINEERS, UNITED STATES ARMY, Fort Schuyler, Bronx, N. Y.: 2 stone figures found on Zapatera Island, Lake Nicaragua, in August, 1930, while engaged in surveying a route for the proposed Nicaragua Canal (117857). Permanent loan.

TARBOX, Mrs. GLENNIE. (See under the Estate of Miss Frances Blatchford de Krafft.)

TAYLOR SONS Co., CHARLES, Cincinnati, Ohio: Specimen of cyanite from Kharsawan, India (118459).

TAYLOR, Dr. EDWARD H., Lawrence, Kans.: 1 marine toad from southern Texas (119461).

TEETERS, JESSE M., Shoshoni, Wyo.: A right ramus containing 4 teeth of a fossil perissodactyl from Wind River formation, Wind River Basin, Wyo. (117886).

TELEPHONE CAMERA CLUB, Washington, D. C. (through L. V. Williams): 64 pictorial photographs for special exhibition during March, 1932 (118712). Loan.

TEXAS AGRICULTURAL EXPERIMENT STATION, Temple, Tex. (through Prof. Simon E. Wolff): 1,105 specimens of plants from central Texas (116888).

TEXAS STATE COLLEGE FOR WOMEN, Denton, Tex.: 1 specimen of orchid from Texas (117230).

TEXAS, UNIVERSITY OF, Austin, Tex.: 17 specimens of ferns from Texas (119051).

THOMAS, EDWARD S. (See under Ohio State Museum.)

THOMAS, LEN R., Sydney, Australia: A collection of 500 specimens of recent Bryozoa from Australia (117895).

THOMPSON, HAROLD M., Boyd, Md.: Semidouble egg of domestic hen (115835).

THOMPSON, JOHN W., Seattle, Wash.: 18 specimens of plants from Washington and Oregon (117891, 118020); 442 specimens of plants from Washington (119537, exchange).

THOMPSON, JOHN W., Washington, D. C.: Early American warming dish with lid (117425).

THOMSEN, RICARDO, Montevideo, Uruguay: 4 vials of copepods and 4 vials of amphipods from Uruguay (118261).

THROPP, Mrs. MIRIAM D., Washington, D. C.: Flounce of Point d'Argentan lace (118473). Bequest.

TIDESTROM, I. (See under Department of Agriculture, Bureau of Plant Industry.)

TILGENKAMP, Dr. E., Zürich, Switzerland: A collection of photographs and other data describing and illustrating the record balloon ascension of Piccard and Kipfer from Augsburg, Germany, May 27, 1931 (116542).

TIMBERLAKE, P. H., Riverside, Calif.: 47 bees (119192).

TINKLEPAUGH, Dr. O. L., Orange Park, Fla.: 2 live box turtles from Orange Park, Fla. (116721).

TOMKINS, IVAN R., Savannah, Ga.: 30 specimens of shrimps from Savannah, Ga., collected by the donor (116248); 6 specimens of fishes and 2 shrimps (117198); 6 concretions of flint dredged from the Savannah River (118450).

TOWNSEND, Dr. C. H. (See under New York Zoological Society.)

TOWNSEND, Dr. C. H. T., São Paulo, Brazil: 84 specimens of Diptera (flies) representing 33 named species, 23 of which are new to the collection (116415). Exchange.

TRAINER, D. V., jr., Hamilton, N. Y.: A specimen of rose quartz containing graphite from 1 mile north of Port Henry, N. Y. (119146).

TREASURY, U. S. DEPARTMENT OF THE: 14 specimens of obsolete Turkish paper currency (117678).

Bureau of Engraving and Printing: 3 specimens illustrating the making of engraved chrome plates Nos. 1171, 123842, 124097 (117272).

Bureau of the Mint: (Through R. J. Grant, director) 2 bronze copies of the gold medal awarded by the Congress of the United States to Maj. Walter Reed, U. S. Army, and his associates "who gave to man control of yellow fever" (117233); 18 specimens of United States coins struck in 1931 (118695); German 50,000,000-mark piece struck in 1923 (119557); 132 specimens of ancient and modern coins (119749).

Bureau of the Public Health Service (through Dr. C. E. Rice): 1 spider (116606).

Coast Guard: A mass of worm tubes (116918).

TREMOLERAS, JUAN, Montevideo, Uruguay: 39 flies from Uruguay (119538).

TRIMBLE, Dr. ELI, Seymour, Mo. (through Edwin W. Mills): Grooved limestone ax from Missouri (115584).

TROEMNER, HENRY, Philadelphia, Pa.: Assortment of 94 specimens of various types of scales, weights, and measures used in American drug stores (116033).

TROVINGER, RAYMOND, Hagerstown, Md.: 1 woodchuck skull and scalp from Hagerstown, Md. (116684).

TURNER, Mrs. THOMAS B., Washington, D. C.: Japanese hat and drum and a Chinese gong and beater (117185).

TURTON, Col. W. H., Clifton, Bristol, England: 112 lots, 180 specimens, of marine shells (mostly paratypes) from Port Alfred, Cape Colony, South Africa (114773). Exchange.

TUTTLE, Mrs. ELIZABETH JANE, Paris, Mo.: Lady's parasol of latter part of 19th century (116522).

TWENTY-NINTH ENGINEERS, U. S. ARMY, ENLISTED MEN OF HEADQUARTERS AND SERVICE PLATOON OF THE. (See under Lieut. B. B. Talley.)

UHLER, F. M. (See under Department of Agriculture, Bureau of Biological Survey.)

UNITED STATES RUBBER Co., Pittsburgh, Pa. (through Albert A. Munsch): 2 sections of heavy black rubber hose, with fittings, and 4 pairs of rubber footwear for coal-mine exhibit (115678).

UNITED STEAM FIRE ENGINE COMPANY No. 3, Frederick, Md.: Clapp and Jones steam fire engine, 1876-1878 (117375).

UNIVERSITETS BOTANISKE MUSEUM, Copenhagen, Denmark: 230 specimens of plants (116600, 118563, 119220, 119319). Exchange.

UNIWERSYTET WARSZAWSKI, Warszawa, Poland: 184 specimens of carboniferous brachiopods from Bolivia (118798). Exchange.

URITA, Prof. T., South Saghalien, Japan: 6 specimens, 6 species, of marine mollusks from South Saghalien Island, Japan (114831).

USINGER, R. L., Oakland, Calif.: 1 bug (119578).

UTAH STATE AGRICULTURAL COLLEGE, Logan, Utah: 12 specimens of beetles from Utah (109608); 5 flies from Utah (111380); 20 specimens of miscellaneous insects from Utah (116094); 5 specimens of Hemiptera (117462); (through George F. Knowlton) 13 specimens of insects (Hemiptera) from Utah (118738); 8 insects (118925).

VALENTINE, Dr. J. M., Chapel Hill, N. C.: 10 crayfishes, approximately 25 isopods, 5 amphipods, 28 paratypes of 10 new species of anophthalmid cave beetles, and 1 vial of alcoholic Silphidae (115383); 19 beetles, representing 17 species, 17 types and 2 paratypes (119395).

VALERIO, MANUEL, San Jose, Costa Rica: 12 isopods, 1 cluster of barnacles, 26 lots, 29 specimens, mostly marine shells from Gulf of Nicoya, Costa Rica, 4 fishes (114797); 3 lots of barnacles (117638).

VANDERLIP, FRANK A., Palos Verdes Estates, Calif.: 2 eggs of sarus crane (118140).

VAN DUZEE, M. C., Buffalo, N. Y.: 6 specimens of flies, representing 3 species (117991).

VAN DYKE, Dr. E. C., Berkeley, Calif.: 9 beetles, representing 6 species, all paratypes (119532).

VAN HYNING, O. C., Gainesville, Fla.: 1 young box turtle from Moniac, Ga. (117989).

VAN HYNING, Dr. T. (See under Florida State Museum.)

VAN METER, S. L., jr., Lexington, Ky.: A free-type manually operated pack parachute and a small demonstration model of the same device, both incorporating the features of U. S. Patent No. 1192479, issued July 25, 1916, to the donor (102821).

VAN ZWALUWENBURG, R. H. (See under Hawaiian Sugar Planters' Association.)

VARGO, Gus, McKeesport, Pa.: Photograph showing a group of the 15th Pennsylvania Volunteer Cavalry, Company L, on Lookout Mountain Point, Tenn., March 11, 1864 (115654).

VARN, MADISON, Washington, D. C.: 2 carved wooden dragons from Formosa (115581). Loan.

VAUGHAN, Dr. T. WAYLAND, La Jolla, Calif.: 4 specimens, 2 species, of corals (119572).

VEVELSTAD, S. H., Juneau, Alaska: A specimen of nickel ore from Yakobi Island, southeastern Alaska (116274).

VONSEN, M., Petaluma, Calif.: Examples of the mineral lawsonite from Sonoma County, Calif. (119147). Exchange.

WADDELL, J. B., Meherrin, Va.: 1 rhinoceros beetle from Virginia (115387).

WADSWORTH, Mrs. HERBERT, Avon, N. Y.: Riker electric brougham of about 1900 with the battery-charging equipment used with it (118161); operating models of 3 devices for steering ships by steam, invented by Herbert Wadsworth, together with a copper boiler for operating the same (119413).

WAILES, G. H., Nanaimo, British Columbia: 2 amphipods from Tower Lake, British Columbia (114187); 8 specimens of amphipods and 5 specimens of isopods (115824); approximately 100 copepods (116225); 6 vials of Crustacea (117050).

WAIZHARD, Dr. I., Rishon-le-Zion, Palestine: 3 coins of Palestine; 1-mill, 5-mill, and 10-mill pieces struck in 1927 (115700).

WALCOTT, Mrs. CHARLES D., Washington, D. C.: 3 ancient poi bowls, 2 pieces of tapa cloth, 4 lots of lava specimens, 1 lot of shells, and 1 silver sword plant, collected in Hawaii during 1931 (116397); 6 specimens of plants from Western United States (118144); pitched storage basket made by the Havasupai Indians of Arizona (119162, loan); 1 specimen of plant from Oklahoma (119512). (See also under Will J. Cooper.)

WALLACE, Mrs. MYRA, Bath, N. Y. (through C. H. Moore, jr.): A semi-helicon E-flat cornet (117166).

WALSH, Mrs. ETHEL WINONA, Hyattsville, Md.: Tea cloth from the wedding linen of Priscilla Cutts, granddaughter of Rev. Edward Holyoke, president of Harvard University, 1737-1769, and ancestor of the donor (119153).

WAR, U. S. DEPARTMENT OF (through Lieut. Col. W. F. Jones, Q. M. C.): Victoria and double harness purchased for White House service and used during the administrations of Presidents Roosevelt and Wilson (100257); grading transit of 1854 used by Capt. M. C. Meigs, United States Army, in surveys for the Washington aqueduct (115960);

WAR, U. S. DEPARTMENT OF—Contd.

Chinese 2-man gun, 2 sword blades, 1 cutlass blade, and 2 saber scabbards (117441); 3 aircraft engines, a Micarta propeller, and 13 aircraft instruments salvaged from current types of military aircraft (116772); an aluminum cast of the Gordon Bennett Trophy plaque awarded Glenn Curtiss in 1909 for winning the speed event at the International Air Meet, Rheims, France (117401); photographic copy of the first United States air reconnaissance, made from a Federal balloon during the Civil War, August 10, 1861 (117459); 2 United States rifles and 1 United States automatic pistol (115701).

WARDLAW, FRANK A., New York, N. Y.: A photograph of one of the paper-horseshoe filament electric lamps used at Menlo Park, N. J., in Thomas A. Edison's first demonstration of his commercially successful incandescent electric lamp (119676). (See also under Frank A. Wardlaw, jr.)

WARDLAW, FRANK A., jr., Inspiration, Ariz. (through Frank A. Wardlaw): A working model of an Amoskeag steam fire engine (118647).

WARD'S NATURAL SCIENCE ESTABLISHMENT, Rochester, N. Y.: 32 specimens of Silurian and Devonian crinoids from England and Germany, and 4 slabs of crustaceans from the Jurassic rocks of Bavaria (116419); a collection of brachiopods (116913). Exchange.

WASHINGTON UNIVERSITY, St. Louis, Mo.: 3 rare crinoids from the Devonian of Germany (118097). Exchange.

WASHINGTON, UNIVERSITY OF, COLLEGE OF FORESTRY, Seattle, Wash. (through Ellwood S. Harrar, jr.): 6 woods from the Pacific coast forest region of United States (118393); 54 microscope mounts of Panama woods made from samples furnished from our duplicate collection (119753). Exchange.

WASKEY, FRANK, Dillingham, Alaska:

A bone and an ivory specimen from the Togiak region, Alaska (117332).

WATKINS, WILLIAM N. (See under Smithsonian Institution, National Museum.)

WATSON, Capt. ADOLPHUS EUGENE, Washington, D. C.: Mirror owned by Edward Winslow, governor of Plymouth Colony, 1644-1647 (115944). Loan.

WATSON, Mr. and Mrs. ERNEST, Brooklyn, N. Y.: 40 block prints, black and white and in color, by Ernest W. Watson and his wife, Eva Auld Watson, for special exhibition, November 30, 1931, to January 3, 1932 (117096). Loan.

WATT, Mrs. R. D., Marshall, Va.: Carved cinnabar lacquered vase from China (115660). Loan.

WEAVER, Mrs. GUSTINE COURSON, McKinney, Tex. (through Senator Morris Sheppard): 3 all-cotton dolls (117806).

WEBSTER, Mrs. CARRIE BAYLY. (See under Mrs. Delia Bayly Orem.)

WEDMORE, R., Beckenham, Kent, England: 3 unused postage stamps of Prussia issued 1850-1856 (118373).

WEEKS, A. W., San Antonio, Tex. (through Dr. L. W. Stephenson): 3 specimens, 2 species, of fresh-water fossil mollusks from Texas (119227).

WEIGHT, K. E. (See under Department of the Interior, National Park Service.)

WEIS, ANDREW L., Fort Lauderdale, Fla.: Working model of a marine beam engine made in 1888 by the donor's brother, Frank N. Weis (115976).

WELLS, J. W., Homer, N. Y.: 1 specimen of crinoid preserving crown, stem, and anchor, from the Hamilton formation, N. Y. (118931).

WETMORE, DR. A., Takoma Park, Md.: 1 young robin (116083); 1 bat from Washington, D. C. (116328); 6 birds (116624); 11 sparrows (117331, 117449, 118707, 119028); 2 migrant shrikes (117976); 1 meadowlark (118876); 1 robin (118933); 2 young turkey vultures (119762); 2 eggs of

WETMORE, Dr. A.—Continued.
the mourning dove (119776). (See also under Smithsonian Institution, National Museum.)

WEYMOUTH, Dr. F. W. (See under Department of Commerce, Bureau of Fisheries.)

WHEELER, Prof. G. C. (See under University of North Dakota.)

WHERRY, Dr. EDGAR T., Philadelphia, Pa.: 14 specimens of plants chiefly from Western United States (118759).

WHITCOMB, Dr. LAWRENCE, Bethlehem, Pa.: A rare brachiopod from Salona, Pa. (118031). (See also under Lehigh University.)

WHITE, Mrs. ELEANOR C., Washington, D. C.: 6 specimens of plants from Santa Cruz Island, Calif. (118577).

WHITE, Mrs. ELIZABETH EDWARDS, Phoebus, Va.: A knitted shawl about 57 years old that had belonged to Mrs. Annie Hodge Edwards, mother of the donor (117603).

WHITE, J. I., Sutherlin, Va. (through Hon. T. G. Burch): 3 plugs of tobacco raised by Dr. Thomas W. White, near Laurel Grove, Pennsylvania County, Va., with slave labor in 1859 (118566).

WHITTIER ORNITHOLOGICAL ACADEMY, Whittier, Calif. (through Dr. Leon Patrick, president): An Australian paroquet (117234).

WILKENS, HANS, Reading, Pa.: 1 specimen of grass from Pennsylvania (117482).

WILLIAMS, B. H., Washington, D. C.: 1 brook lamprey from Rockwest Creek, Wilcox County, Ala. (119786). prehistoric artifacts collected at various sites in Alabama and West Virginia (119791).

WILLIAMS, DAN W., Jackson, Ohio: 1 beetle (117484).

WILLIAMS, JAMES S., Washington, D. C.: Approximately 2,000 specimens of Devonian (Tully) invertebrate fossils from central New York (116994); 1 trilobite from the Hamilton group of New York (118714).

WILLIAMS, L. V. (See under Telephone Camera Club.)

WILLIAMS, R. O. (See under Department of Agriculture, Trinidad.)

WILLIAMS, Mrs. WILLIAM, Wilmington, N. C.: Specimen of rare plant from Wrightsville Beach about 12 miles from Wilmington (116709).

WILLIAMSON, E. B., Ann Arbor, Mich.: 37 specimens of dragonflies, representing 16 species, 2 of which are represented by paratypes (118588).

WILLIAMSON, Mrs. JOHANNA, Los Angeles, Calif.: Navaho rug made about 1880 (117060).

WILLIS, Mrs. LEWIS, Beahm, Va.: 1 goldfinch (117820).

WILLSE, Mrs. HERBERT M. C., Fort Pearse, Fla.: 1 parrot (115407).

WILLYS-OVERLAND (INC.), Toledo, Ohio: Willys-Knight automobile engine of 1927-28, sectioned and operating for exhibition use (114992).

WILSON, Dr. CLARENCE TRUE. (See under the Misses Simpson.)

WILSON, FLOYD J., Berkeley, Calif.: 2 vials, approximately 25 specimens, of amphipods (117343).

WILSON, PERCY. (See under New York Botanical Garden.)

WING, LEONARD W., Ann Arbor, Mich.: 1 skin and 1 alcoholic specimen of Kirtland's warbler (116961).

WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, Madison, Wis. (through Dr. Chancey Juday): Approximately 100 specimens of Cladocera from a brackish pond, at Teller, Alaska, collected by the Canadian Arctic expedition, March 8, 1915 (115768).

WITCOMBE, McGEACHIN & Co. (INC.), New York, N. Y.: 3 samples of printed drapery fabrics, "George Washington Bicentennial Commemorative Pattern" on cotton and rayon Toile de Rae, and glazed cotton chintz (118593).

WOLF SAFETY LAMP CO. OF AMERICA (INC.), Brooklyn, N. Y. (through Albert A. Munsch): 2 Wolf miners' safety lamps, for coal-mine exhibit (115670).

WOLFF, Prof. SIMON E. (See under Texas Agricultural Experiment Station.)

WOLFLEY, Mrs. ELIZABETH F., Mrs. ELEANOR WOLFLEY BISELL, Mrs. CAROLINE WOLFLEY SHANNON, and Mrs. ELIZABETH WOLFLEY HARMAN, Washington, D. C. (through Thomas J. Shannon): Microscope No. 161 made by Franz Schmidt and Haensch, Berlin, and used by Lieut. Col. William Irvin Wolfley, 62d Ohio Infantry, U. S. Volunteers, husband and father of the donors (116020); 49 specimens of surgical instruments, medical equipment, and personal relics of Surgeon Lewis Wolfley, United States Navy, and Lieut. Col. William Irvin Wolfley, United States Volunteers (116996).

WOOD, C. F. (See under Dr. David C. Graham.)

WOOD, Miss L. M., Washington, D. C. (through the Misses Long): Silver flower holder of 19th century (116718).

WOODS, RAY, Afognak, Alaska: Human skull from the Karluk Lake region, Kodiak Island, Alaska, collected on September 26, 1931, by the donor and J. T. Barnaby (117077); 11 stone implements found along the Karluk River, Alaska (117336).

WORDEN, EDWARD C., Millburn, N. J.: 1 specimen of large ocean sunfish (115972).

WORTHY PAPER Co., West Springfield, Mass.: A book, "Here, There and Everywhere," by Edgar S. Bliss, printed by William Edwin Rudge (Inc.), on Worthy Hand and Arrows paper (116615).

WORTLEY, Mrs. R. S., Washington, D. C.: Portrait sketch of Rear Admiral Winfield Scott Schley, by George Piexotto (116735).

WORTMAN, J. L., Brownsville, Tex.: 9 specimens of fossil mammals from Bridger (Eocene) of Wyoming (116838).

WOTHERSPOON, Mrs. MARY A., Washington, D. C.: 12 baskets, blowgun, dart quiver, and a rice cutter (115432).

WU, Prof. CHENFU F. (See under Yenching University.)

WYSOGORSKY, Dr. JOHANN, Hamburg, Germany: 46 specimens of fossil brachiopods (116420). Exchange.

YALE UNIVERSITY, New Haven, Conn.: *Peabody Museum of Natural History*: Cast of type specimen of a fossil cormorant (118466); (through Dr. Carl O. Dunbar) 4 wax impressions from German Devonian brachiopods in Yale Museum (119534).

School of Forestry: 1 specimen of plant (rosewood) from Honduras (116475); 5 specimens of plants from British Honduras (117680); (through Prof. S. J. Record) 116 study samples of Liberian woods; 5 specimens of ferns from Ecuador (118354, 118514). Exchange.

YENCHING UNIVERSITY, Peiping, China (through Dr. Chenfu F. Wu): 154 specimens of miscellaneous insects, 30 specimens of marine invertebrates and 22 specimens of fresh-water shells, from China (105018).

YOTHERS, W. W. (See under Department of Agriculture, Bureau of Entomology.)

YOUNG, EDWARD H., Washington, D. C.: A group of 4 photographs illustrating first official military endurance flights, made at Fort Myer, Va., July 27, 1909, by Orville Wright with Lieut. F. P. Lahm as passenger (116257).

ZAHM, Dr. ALBERT F., Washington, D. C.: 4 seeds of the *Zanonia macrocarpa* and a Pichancourt ornithopter (119549).

ZETEK, Dr. JAMES, Balboa, Canal Zone: 4 paratypes of a marine shell from Panama (115828).

ZIMMERMAN, DR. JEREMIAH, Syracuse, N. Y.: Ancient Egyptian beaded breast ornament (117670).

ZOOLOGICAL SOCIETY OF SAN DIEGO, San Diego, Calif.: 1 Celebesian thick-billed parrot (115494).

ZOOLOGISCH MUSEUM, Amsterdam, Netherlands: 2 paratypes of a lizard from Sumatra (116895); (through Dr. L. F. de Beaufort) 30 specimens

(topotypes) of Bryozoa of the *Siboga* expedition (118223). Exchange.

ZOOLOGISCHE MUSEUM, Berlin, Germany: 28 birds, including 11 genera new to the Museum (115888); 39 birds from New Guinea comprising 29 species and 3 genera of forms new to the Museum (116989). Exchange.

PUBLICATIONS ISSUED BY THE UNITED STATES NATIONAL MUSEUM DURING THE FISCAL YEAR 1931-32

REPORT

Report on the progress and condition
of the United States National
Museum for the year ended June
30, 1931.
8vo., pp. i-ix, 1-223, pls. 1, 2.

PROCEEDINGS

Proceedings of the United States Na-
tional Museum. Volume 77.
8vo., arts 1-20, xvi+610 pp., 99
figs., 116 pls.

Proceedings of the United States Na-
tional Museum. Volume 78.
8vo., arts. 1-23, xii+802 pp., 57
figs., 70 pls.

BULLETINS

No. 100, volume 2. Contributions to
the biology of the Philippine
Archipelago and adjacent regions:
Papers on collections gathered by
the *Albatross* Philippine expedi-
tion 1907-1910. By Maynard M.
Metcalf, Hoyt S. Hopkins, H. V.
Wilson, and Paul Bartsch.
8vo., pp. i-vii, 1-562, 159 figs.,
pls. 1-60.

No. 104, part 8. The foraminifera of
the Atlantic Ocean: Rotaliidae,
Amphisteginidae, Calcarinidae,
Cymbaloporettidae, Globorotali-
dae, Anomalinidae, Planorbili-
dae, Rupertiidae, and Homotremidae. By Joseph Augustine
Cushman.
8vo., pp. i-ix, 1-179, pls. 1-26.

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the Dominican Republic. By Her-
bert W. Krieger.
8vo., pp. i-iii, 1-165, pls. 1-56.

No. 157. The butterflies of the Dis-
trict of Columbia and vicinity.
By Austin H. Clark.
8vo., pp. i-ix, 1-337, pls. 1-64.

No. 159. The birds of the Natuna
Islands. By Harry C. Oberholser.
8vo., pp. i-vi, 1-137, 1 fig.

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ns in the United States National Mu-
seum. By Remington Kellogg.
8vo., pp. i-iv, 1-224, 24 figs.,
pl. 1.

No. 161, part 1. The foraminifera of
the Tropical Pacific collections of
the *Albatross*, 1899-1900: Astro-
rhizidae to Trochamminidae. By
Joseph Augustine Cushman.
8vo., pp. i-vi, 1-88, 1 fig., pls.
1-17.

No. 162. Life histories of North Amer-
ican gallinaceous birds: Orders
Galliformes and Columbiformes.
By Arthur Cleveland Bent.
8vo., pp. i-xi, 1-490, pls. 1-93.

PAPERS PUBLISHED IN SEPA- RATE FORM

FROM THE BULLETINS

From No. 100, volume 6. Contribu-
tions to the biology of the Philip-
pine Archipelago and adjacent re-
gions: Part 5, Four new species of
polychaetous annelids collected by
the United States Fisheries steam-
er *Albatross* during the Philippine
expedition of 1907-1910. By
Aaron L. Treadwell.
8vo., pp. 313-321, 4 figs.

From the same: Part 6, The Philip-
pine land mollusks of the genus
Opisthoporus. By Paul Bartsch.
8vo., pp. 323-327, 1 fig., pls. 81,
82.

From volume 28 of the Contributions
from the United States National
Herbarium: Part 2, The American
species of Thibaudieae. By Al-
bert C. Smith.
8vo., pp. i-xiii, 311-547, fig. 143,
pls. 1-19.

FROM VOLUME 79 OF THE PROCEEDINGS

No. 2867. Three new species of polychaetous annelids from Chesapeake Bay. By Aaron L. Treadwell.

Art. 1, pp. 1-5, 3 figs.

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Art. 2, pp. 1-36, pls. 1, 2.

No. 2870. Four new species of trematode worms from the muskrat. *Ondatra zibethica*, with a key to the trematode parasites of the muskrat. By Emmett W. Price.

Art. 4, pp. 1-13, 4 figs.

No. 2872. Two new species of nematode worms of the genus *Ostertagia* from the Virginia deer, with a note on *Ostertagia lyrata*. By G. Dikmans.

Art. 6, pp. 1-6, 1 fig., pls. 1, 2.

No. 2876. Report on birds recorded by the Pinchot expedition of 1929 to the Caribbean and Pacific. By Albert K. Fisher and Alexander Wetmore.

Art. 10, pp. 1-66, pls. 1-10.

No. 2877. The two-winged flies belonging to *Siphonsturmia* and allied genera, with descriptions of two new species. By H. J. Reinhard.

Art. 11, pp. 1-11.

No. 2879. Notes on and descriptions of some American moths. By Carl Heinrich.

Art. 13, pp. 1-16, 1 fig., pls. 1-7.

No. 2880. Descriptions of thirteen new American and Asiatic ichneumon-flies, with taxonomic notes. By R. A. Cushman.

Art. 14, pp. 1-16.

No. 2881. Descriptions of new marine mollusks from Panama, with a figure of the genotype of *Engina*. By Paul Bartsch.

Art. 15, pp. 1-10, pl. 1.

No. 2882. Descriptions of a new genus and eight new species of ichneumon-flies, with taxonomic notes. By C. F. W. Muesebeck.

Art. 16, pp. 1-16, 1 fig.

No. 2883. A new species of trematode of the family Heterophyidae, with a note on the genus *Apophallus* and related genera. By Emmett W. Price.

Art. 17, pp. 1-6, 1 fig.

No. 2884. Two new lungworms from North American ruminants and a note on the lungworms of sheep in the United States. By G. Dikmans.

Art. 18, pp. 1-4, pls. 1, 2.

No. 2885. A new genus and new species of trematode worms of the family Plagiorchiidae. By John T. Lucker.

Art. 19, pp. 1-8, pl. 1.

No. 2886. Revision of the American parasitic flies belonging to the genus *Winthemia*. By H. J. Reinhard.

Art. 20, pp. 1-54, pl. 1.

No. 2887. Some Tertiary mollusks from southern Florida. By W. C. Mansfield.

Art. 21, pp. 1-12, pls. 1-4.

No. 2888. The stegocephalid and amphipod crustaceans of Newfoundland, Nova Scotia, and New Brunswick in the United States National Museum. By Clarence R. Shoemaker.

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Art. 23, pp. 1-16, pls. 1, 2.

No. 2890. Three new parasitic nematode worms. By Mary Scott Skinker.

Art. 24, pp. 1-9, 19 figs.

No. 2891. Report on a collection of insects of the order Trichoptera from Siam and China. By A. B. Martynov.

Art. 25, pp. 1-20, pls. 1-4.

No. 2892. Four new species of trematode worms of the subfamily Onchocotylinae. By G. A. MacCallum.

Art. 26, pp. 1-8, 1 fig., pl. 1.

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No. 2897. A new nematode worm, *Viannaia bursobscura*, from the opossum, with a note on other parasites of the opossum. By G. Dikmans. Art. 31, pp. 1-4, pls. 1, 2.

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No. 2899. A new Middle Cambrian merostome crustacean. By Charles Elmer Resser. Art. 33, pp. 1-4, pl. 1.

No. 2900. Flies of the genus *Pseudotephritis* Johnson (Diptera: Ornatidae). By John R. Malloch. Art. 34, pp. 1-6.

FROM VOLUME 80 OF THE PROCEEDINGS

No. 2901. Observations on the growth rate of the foot in the mound birds of the genus *Megapodius*. By Herbert Friedmann. Art. 1, pp. 1-4.

No. 2902. Three new species of polychaetous annelids in the collections of the United States National Museum. By Aaron L. Treadwell. Art. 2, pp. 1-5, 3 figs.

No. 2903. Recent foraminifera from the Atlantic coast of South America. By Joseph A. Cushman and Frances L. Parker. Art. 3, pp. 1-24, pls. 1-4.

No. 2904. The North American beetles of the genus *Coccinella*. By Th. Dobzhansky. Art. 4, pp. 1-32, 30 figs.

No. 2905. Echinoderms from the islands of Nuafoou and Nukualofa, Tonga Archipelago, with the description of a new genus and two new species. By Austin H. Clark. Art. 5, pp. 1-12, pls. 1-8.

No. 2906. The fishes obtained by the Pinchot South Seas expedition of 1929, with description of one new genus and three new species. By Henry W. Fowler. Art. 6, pp. 1-16, 4 figs.

No. 2907. A second collection of birds from the Provinces of Yunnan and Szechwan, China, made for the National Geographic Society by Dr. Joseph F. Rock. By J. H. Riley. Art. 7, pp. 1-91.

No. 2908. A catalogue of the Trombiculinae, or chigger mites, of the New World, with new genera and species and a key to the genera. By H. E. Ewing. Art. 8, pp. 1-19, pls. 1-3.

No. 2909. The West American molusks of the genus *Acar*. By Paul Bartsch. Art. 9, pp. 1-4, pl. 1.

No. 2910. Notes on Francis Walker's types of North American flies of the family Tachinidae. By J. M. Aldrich. Art. 10, pp. 1-16.

No. 2911. North American two-winged flies of the genus *Spathimeigenia*, with descriptions of five new species. By J. M. Aldrich. Art. 11, pp. 1-10.

No. 2912. The birds of St. Lawrence Island, Bering Sea. By Herbert Friedmann. Art. 12, pp. 1-31, 2 figs., pls. 1-6.

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No. 2916. The ancient caves of Szechuan Province, China. By David Crockett Graham.
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No. 2917. A new marine shell of the genus *Xenophora* from Florida. By Paul Bartsch.
Art. 17, pp. 1, 2, pl. 1.

No. 2918. The parasitic habit in the ducks, a theoretical consideration. By Herbert Friedmann.
Art. 18, pp. 1-7.

No. 2919. A review of the nematodes of the genus *Hastospiculum*, with descriptions of two new species. By B. G. Chitwood.
Art. 19, pp. 1-9, pls. 1-3.

No. 2920. Records of dipterous insects of the family Tachinidae reared by the late George Dimmock, with

description of one new species and notes on the genus *Anetia* Robineau-Desvoidy. By J. M. Aldrich.

Art. 20, pp. 1-8.

No. 2922. New West Indian cerambycid beetles. By W. S. Fisher.
Art. 22, pp. 1-93.

FROM VOLUME 81 OF THE PROCEEDINGS

No. 2924. New bopyrid isopod crustaceans from Dry Tortugas, Florida. By A. S. Pearse.
Art. 1, pp. 1-6, 26 figs.

No. 2926. A new species of cestode, *Crepidobothrium amphiumae*, from *Amphiuma tridactylum*. By Clarke Courson Zeliff.
Art. 3, pp. 1-3, pl. 1.

No. 2932. New Diptera, or two-winged flies, from America, Asia, and Java, with additional notes. By J. M. Aldrich.
Art. 9, pp. 1-28, 2 figs., pl. 1.

No. 2933. A cache of Basket Maker baskets from New Mexico. By Walter Hough.
Art. 10, pp. 1-3., pls. 1-3.

PAPERS BASED WHOLLY OR IN PART ON THE COLLECTIONS IN THE UNITED STATES NATIONAL MUSEUM, PUBLISHED BY THE MUSEUM AND ELSEWHERE DURING THE FISCAL YEAR 1931-32

Adams, Ansel Easton.

[From One Man Show at the Smithsonian Institution, Washington, D. C.]: The Camera, vol. 43, no. 1, July, 1931, 7 figs. (no text).

Aldrich, J. M.

Notes on the tachinid genus *Chae-tonodexodes*, with one new species: Ann. Mag. Nat. Hist., ser. 10, vol. 8, no. 44, Aug., 1931, pp. 205-207.

Notes on Francis Walker's types of North American flies of the family Tachinidae: Proc. U. S. Nat. Mus., vol. 80, art. 10, no. 2910, Nov. 10, 1931, pp. 1-16.

North American two-winged flies of the genus *Spathimeigenia*, with descriptions of five new species: Proc. U. S. Nat. Mus., vol. 80, art. 11, no. 2911, Dec. 31, 1931, pp. 1-10.

A new genus and two new species of muscoid flies from Guatemala: Proc. Ent. Soc. Washington, vol. 34, no. 2, Feb., 1932, pp. 23-25.

Records of dipterous insects of the family Tachinidae reared by the late George Dimmock, with description of one new species and notes on the genus *Anetia* Robineau-Desvoidy: Proc. U. S. Nat. Mus., vol. 80, art. 20, no. 2920, Mar. 31, 1932, pp. 1-8.

Collecting flies in the Gaspé Peninsula of eastern Quebec: Expl. and Field-Work of the Smithsonian Inst. in 1931, Publ. 3134, 1932, pp. 83-86, figs. 78-81.

New Diptera, or two-winged flies, from America, Asia, and Java, with additional notes: Proc.

U. S. Nat. Mus., vol. 81, art. 9, no. 2932, June 30, 1932, pp. 1-28, figs. 1, 2, pl. 1.

Alicata, Joseph E.

A new trematode, *Acanthatrium eptesici*, from the brown bat: Journ. Washington Acad. Sci., vol. 22, no. 10, May 19, 1932, pp. 271-274.

(See also under Schwartz, Benjamin.)

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Check-list of North American birds: Ed. 4, 1931, xix+526 pp.

Anderson, C. E.

New York Camera Club's "Manhattan" Show, with 16 illustrations from the Manhattan Show at the Camera Club, New York, and at the Smithsonian Institution, Washington, D. C.: The Camera, vol. 43, no. 3, Sept., 1931, pp. 161-169, etc.

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Oldest steam locomotive celebrates hundredth anniversary: Transportation World, vol. 1, no. 7, Jan., 1932, pp. 12, 13, 2 figs.

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Bailey, Vernon.

Mammals of New Mexico: North Amer. Fauna No. 53, Dec., 1931 (Mar. 1, 1932), 412 pp., 56 figs., 22 pls.

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Revision of the chalcid flies of the tribe Decatomini (Eurytomidae) in America north of Mexico: Proc. U. S. Nat. Mus., vol. 79, art. 28, no. 2894, May 19, 1932, pp. 1-95, pls. 1-4.

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Bangs, Outram.

A small collection of birds from the Silinda Forest: Proc. New England Zool. Club, vol. 12, Aug. 13, 1931, pp. 55-76.

Barber, H. G.

A new *Oncerotrachelus* from Cuba (Hemiptera; Reduviidae): Bull. Brooklyn Ent. Soc., vol. 26, no. 4, Oct., 1931, pp. 185, 186.

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A new North American lizard: Copeia, 1931, no. 3, Oct. 30, 1931, pp. 87-89.

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Descriptions of new marine mollusks from Panama, with a figure of the genotype of *Engina*: Proc. U. S. Nat. Mus., vol. 79, art. 15, no. 2881, Aug. 1, 1931, pp. 1-10, pl. 1.

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Report on the Department of Geology: Ann. Rep. U. S. Nat. Mus. for 1931, Dec. 10, 1931, pp. 95-107, pl. 2.

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(See also under Canu, Ferdinand.)

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Some *Erythroneura* (grape leaf hoppers) of the *maculata* group (Homoptera, Cicadellidae): Can. Ent., vol. 63, no. 6, June, 1931, pp. 127-135.

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The old quilt and coverlet: Practical Home Economics, vol. 10, no. 5, May, 1932, pp. 151, 152, 172, 4 figs., and no. 6, June, 1932, pp. 189, 190, 210, 3 figs.

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Note on *Odynerus bermudensis*, with a description of the male (Hymenoptera: Vespidae): Ent. News, vol. 42, no. 10, Dec., 1931, pp. 277-279.

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Blake, Doris Holmes.
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